

THE Soybean Digest

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THE AMERICAN SOYBEAN ASSOCIATION

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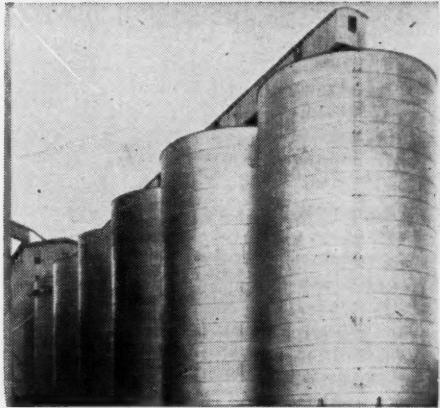
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EDITOR'S DESK ➤

One Way to Save Grain

In all the outpouring of propaganda in the save-more-food-for-Europe campaign, one really sound method for food conservation could receive more attention than it has. This is the proper balancing of grain with protein in livestock feeding.

There is considerable debate whether meatless and poultryless days will actually save grain. But grain will be saved—IN QUANTITY—if livestock feeders give more careful attention to balanced rations.

One hundred pounds of soybean oil meal and 6 bushels of corn will replace 10 bushels of corn in the feedlot—a replacement of 4 bushels of corn. A highly profitable replacement when oil meal is actually selling at a lower price than corn!

The government plans to export 570 million bushels of grain this coming year. A sixth of this amount can be saved in the hog lots of the country alone by balancing corn and protein, Walter C. Berger, president of the American Feed Manufacturers Association, estimates.

"It would be like finding 100 million bushels of corn you didn't know you had," Berger says.

Hogs are the largest users of corn, but similar savings can be made in feeding other livestock and poultry.

Livestock feeders learned much about getting everything they could out of a pound of feed during and since the war. They have made great strides in the use of concentrates. But they can afford to go still further in that direction this year. As a nation we still feed too little protein for most efficient livestock gain per pound of feed.

Stretching grain supplies through good use of concentrates will be patriotic this season—and profitable.

— s b d —

Meet Our New Director

R. H. Peck, new director of the American Soybean Association, from River Canard, Ont., is only 33 years old. But he has been growing soybeans for 22 of those 33 years.

Peck's first soybeans were grown in a school fair contest in 1925. He grew a few each year after that until the middle 30's when he increased the acreage and started registered seed production. Since then, he has sold practically all soybeans for seed.

Mr. Peck operates a 180-acre farm 7 miles south of Windsor, Ont. Cash crops are corn and soybeans with oats, hay and clover for rotation. Soybean varieties (50 acres this year) are A. K. (Harrow) and Harman. Hogs are the only livestock on the farm.

The Harrow Experimental Farm runs a variety test plot on the Peck farm. Mr. Peck is one of the committee members for Essex County in the Ontario Soybean Growers Association, and a member of the agriculture and chemurgy committee of the Windsor Chamber of Commerce. He tells us he is still single.

Mr. Peck is the first ASA director from Canada for a number of years. But in 1929 our president was a Canadian, G. I. Christie of Guelph. And our convention was held at Guelph that year.



E. Engin
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GROWERS

International Show

An Illinois farmer, H. L. Stiegelmeier, of Normal, McLean county, has made the first entries for the 1947 International Grain and Hay Show, which will be held in Chicago Nov. 29 through Dec. 6 in connection with the International Live Stock Exposition.

Stiegelmeier will exhibit soybeans, ear corn, oats, and red clover and timothy seed in this event in which he has won many high awards in past years. At last year's show he exhibited the champion sample of soybeans and was named "Soybean King" of the show.

A "soybean king" will be named again this year at the International Grain and Hay Show, Chicago. State yield contest winners for 1947 will also be recognized at the show.

The soybean king will hold for 1 year the Union Stock Yard and Transit Co. of Chicago trophy now in possession of last year's winner, H. L. Stiegelmeier, Normal, Ill. He will win outright the Philip W. Pillsbury trophy.

Indiana and Illinois yield contest champions were recognized at the International show last year. Only those state contest winners who have been announced prior to the show will be so recognized.

Increased premiums are offered this year and a new system of distributing the prize money will be in effect which will more evenly divide the awards among the exhibitors. Special premiums are also being offered to their exhibitors by several states and provinces.

Educational exhibits will feature the newest varieties of field crops including soybeans released by the experiment stations and the progress made by the crop improvement associations since the first show was held in 1919.

Soybean classes at this year's International will include: (1 peck)

Regions 1 and 2, Yellow or Greenish Yellow.

Regions 1 and 2, Any Other Varieties.

Regions 3 and 7, Yellow or Greenish Yellow.

Regions 3 and 7, Any Other Varieties.



H. L. STIEGELMEIER—Last year's soybean king.

Regions 4 and 8, Yellow or Greenish Yellow.

Regions 4 and 8, Any Other Varieties.

Regions 5 and 6, Yellow or Greenish Yellow.

Regions 5 and 6, Any Other Varieties.

Special awards are being offered to soybean winners from Ontario, North Dakota and Minnesota.

Urge Farm Storage

"Soybean producers of Illinois and the entire country suffered substantial losses before the war because they did not store their soybeans and market them in an orderly fashion throughout the crop year," said A. E. Staley, Jr., before the recent "Looking Ahead with Agriculture" conference at Decatur, Ill. Staley is president of A. E. Staley Mfg. Co.

"Soybean marketing is now in the post-war period," said Staley. "It will pay the farmer to change his previous marketing methods. The crop is larger and the losses incurred prewar may be even greater from here on if the crop is rushed to market.

"Not only is harvest marketing expensive, but it is also harmful to our entire economy. It produces heavy strain on our already-overloaded transportation system and burdens the facilities of our entire marketing mechanism.

"I believe producers will be well advised to carefully consider whether or not their

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best interests would be served by storing a substantial portion of the crop for delivery sometime after the first of the year. I believe producers will, except in occasional years of declining commodity prices, profit from such storage."

An Iowa State College farm economist took a different view from that of the Illinois processor.

Said Francis Kutish of Ames in a recent press release:

"It may be wise for farmers to sell soybeans early this year. Prices of most fats and oils have fallen this summer even in the face of a general inflationary price rise."

The total output of domestic edible oils will be up 5 to 10 percent this year, Kutish says. Soybean production will be about the same as last year. There are prospects of a 37 percent larger cotton crop and a 72 percent increase in flax production.

Foreign output of copra and coconut oil is large, and this country is expected to import heavily again next year, Kutish says. However, lard and tallow supplies will probably be smaller next year because of the short corn crop.

The farmer who holds soybeans this year should do so in the expectation that there will be a further inflationary price rise which will carry oils up with it, Kutish says.

Losing Soil Minerals

Big corn and soybean crops during 1942-46 have intensified the drain of all the more common mineral elements from Illinois soils, according to O. L. Whalin, University of Illinois agricultural extension service. He said that the unusual firing of corn in August was due only partly to dry weather and that lack of nitrogen was a more important cause.

During this five-year period only about half of the nitrogen taken from the soil was replaced. This replacement included nitrogen in fertilizer applications, plus 60 percent of the nitrogen in legumes harvested and in sweet clover plowed under (about two-thirds of the nitrogen in legumes when inoculated comes from the air).

Also, only about half of the phosphorus removed from the soil was put back, and

less than one-thirtieth as much potassium was added through commercial fertilizers as was removed by harvested crops.

"This heavy drain on the mineral supply in the soil has reached the point where yields on many soils definitely depend on the amount of minerals applied," Whalin stated. "Manure, inoculated legumes, phosphate and potash applied as required will maintain and even increase yields on most Illinois soils. Carrying out such a program also calls for liming much of the land in order to grow legumes."

During the five-year period about 1,500,000 tons of nitrogen were returned to the land compared with approximately 3,300,000 tons removed in harvested crops.

DDT Stops Webworms

Spraying a soybean field with DDT quickly stopped a webworm infestation on a farm in Mason County, Ill., this past season, reports the *Manito Community Express*.

During the past few years webworms have gained quite a foothold in Mason and Tazewell Counties, according to the *Express*. Late in August the worms moved from a field of alfalfa to a 40-acre soybean field on the Clyde Priddy farm. The worms completely stripped eight rows of beans and were moving into the field at the rate of about 5 acres per day.

The decision to spray the field with DDT solution was made.

Priddy sprayed the field with a DDT solution. At the time of spraying there were as high as 60 worms on one leaf. Four days later a search of 10 minutes netted one worm.

As Beetle Control

Soybeans are being used by Montgomery County, Md., farmers to fight Japanese beetles on corn, reports County Agent O. W. Anderson, in the *Washington Post*.

The beetles caused extensive damage to the corn crop both in 1946 and 1947. More than \$250,000 was lost by Montgomery County farmers in 1946 due to the Japanese beetles, and early reports indicated that the damage might be greater this year.

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"Farmers who followed recommendations that they ring their cornfields with soybeans, which are more attractive to the beetles, are relatively free of the pests," Anderson said. "The beetles eat the beans, which are

soaked with DDT, and never reach the corn," he explained.

Damage by the beetles was reported to both corn and soybeans in neighboring counties.

ONTARIO GROWERS ORGANIZE

By R. H. PECK
River Canard, Ont.

The Ontario Soybean Growers Association was organized at a meeting at Leamington, Ont., November 8, 1946. Committees set up for the purpose from five counties took part in the organization.

Action had been initiated earlier at a meeting of Essex County soybean growers interested in an organization to look after their interests. There, two committees of five men each from Essex County and Pelee Island were set up to contact soybean growers in other southwestern Ontario counties and urge them to select committees to meet with the Essex County group.

The Association represents growers of about 60,000 acres of soybeans with an estimated yield of 1,134,000 bushels in 1947. Finances are provided by voluntary membership fees and some help from local elevators.

John Wilcox, Woodslee, Essex County, was elected chairman of the group; and Angus McKenny, Essex County agricultural representative, secretary.

Other members of the executive group include: Henry Rahm and Cloice Pearce, Pelee Island; William Wallace, Woodslee, Essex County; John Keil and Harry Pugh, Chatham, Kent County; Duncan Taggart,

Appin, Middlesex County; and Roy McClinton, Springfield, Elgin County.

The usefulness of the organization was shown early. A delegation persuaded the Federal government at Ottawa to raise the ceiling price of soybeans from \$2.15 to \$2.40 to bring it more nearly into line with the ceiling on corn. (Ceiling was removed September 15 of this year.) Proceedings also were started to form an Ontario soybean growers marketing scheme under the Farm Products Marketing Act of Ontario. Under the scheme, which is subject to approval by a vote of the majority of the growers of soybeans, a growers' negotiating committee would meet with a dealers' and processors' negotiating committee to decide on the price, grade, handling charges, etc., of the crop.

The scheme is being held in abeyance, however, since the present price of soybeans is satisfactory; and other such schemes have been running into headaches. But it can be put into force when desired.

The Ontario soybean acreage will likely be increased as earlier-maturing varieties are developed for counties further north, and when more southwestern Ontario farmers recognize their value in the crop rotation.

The future plan of the Association is to do everything possible to promote the soybean industry.

LETTERS TO THE EDITOR

Corrects Story

To the Editor:

Your news account (September 1947) regarding Allis-Chalmers newly developed oil recovery process which you apparently gleaned from the news release we mailed you some time ago, prompted a few corrections from our engineers which we thought might interest you.

Our news release and your article declared that the Delta Products Co. at Wilson, Ark., employed 32 "skilled" workers to operate their hydraulic press. Our engineers inform us that the 32 negroes employed were not skilled workmen. The engineers also point out that the "four" men now operating the new plant consist of 2 men per shift, or 6 men for a 3 shift 24-hour day, which produces only 200 ton of cottonseed rather than 240 ton we quoted in our article.

One other contention set forth by the engineers is the fact that our release implied

that an additional 20 to 25,000,000 dollar revenue would be realized with the new plant. What our release meant and I assume your article, too, was that the entire industry's revenue would be increased by the said amount. Actually the Delta Products Company will increase their revenue by only \$900,000 at current prices.

We are writing you regarding these few corrections in response to the request of our engineers who believe you are entitled to know exactly what this new process will do. They sincerely hope, and so do we, that no serious misunderstanding will result from our release. —R. W. Bogenberger, sales promotion department, tractor division, Allis-Chalmers Mfg. Co., Milwaukee, Wis.

To the Editor:

I wish to compliment your magazine on the fact that you do not carry tobacco and liquor advertisements. —H. A. Anderson, Oakwood, Ill.

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Fig. 1 — This shows response to potash fertilization in a soybean variety fertility experiment on a Norfolk loamy fine sand very low in potash. (Ogden variety in foreground.) The yields of Ogden were as follows: No lime or fertilizer 5.0 bus. per acre; 400 lbs. 0-10-20, 22 bus., 1 ton dolomitic limestone and 400 lbs. 0-10-20, 32 bus.

SOYBEANS IN NORTH CAROLINA

By E. E. HARTWIG and W. L. NELSON¹

IN 1882 A SOYBEAN later designated as Mammoth Yellow was introduced into the northeastern section of North Carolina. This variety proved to be well adapted to the Tidewater area of North Carolina and Virginia and the soybean gained a foothold in America. Soybean production in that area was for the purpose of forage production or for seed to be sold in other areas.

Many of these seeds were planted in more northern states where the variety would not mature. Consequently, it could be used for forage purposes only and growers had to come back to North Carolina for seed stocks each year. This market was lost when earlier maturing varieties were introduced into the Cornbelt. However, in 1915, 200,000 bushels of North Carolina grown beans were crushed by local cottonseed mills.

The first statistics for the soybean crop were in 1909 when it was reported that 12,000 acres were grown in North Carolina with an average yield of 12 bushels per acre. A survey made in 1916 of 50 farms in the Tidewater area on which soybeans

were grown found yields ranging from 4 to 39 bushels per acre with an average yield of about 19 bushels per acre.

In the early years of soybean production, harvesting for seed presented a difficulty. The mule drawn one-row beater was developed for row planted beans, and under favorable conditions saved from 50 to 75 percent of the crop. With the development of the combine harvester most of the one-row beaters have been replaced.

Soybean production in the Carolinas is confined largely to the Coastal Plain area. Here a large part of the crop is planted in rows and is harvested for seed. The Coastal Plain can be divided into the Tidewater area immediately along the coast in which the soils are rather low lying and high in organic matter, and the upper part of the Coastal Plain which has lighter soils. The Tidewater area is not as well suited to the culture of tobacco, cotton, or peanuts as the upper part of the Coastal Plain so soybeans have occupied a much larger percentage of the cultivated acreage. In some of the Tidewater counties of North Carolina, 35 to 45 percent of the cultivated acreage is planted to soybeans. Although soybeans are usually considered better adapted to the Tidewater area, equally good yields

have been obtained on the sandier soils of the Upper Coastal Plain. In the Piedmont area a large portion of the beans grown are seeded solid after small grain and cut for hay.

In the Tidewater area soybeans are planted to occupy the land for the full season or after mid-June following Irish potatoes. When grown as a full season crop they are usually grown in rotation with corn. Farmers in this area consider that soybeans have a definite beneficial effect on the physical condition of their soils. In the more southern sections of the state and in South Carolina, soybeans are often planted after small grain is harvested. Excellent seed yields can be obtained with the late plantings but yields will decrease sharply in most years if the crop is planted after June 20.

Relatively few varieties have gained prominence in North Carolina. The Mammoth Yellow variety which grew so well in the region produced seed relatively low in oil content, and shattered its seed quite readily upon maturity. Mammoth Yellow matured in late October. About 1907 the Tokyo and Haberlandt varieties were introduced. Neither of these varieties offered any improvement in seed holding but Haberlandt

¹Assoc. Agron., U. S. Regional Soybean Lab., Bureau of Plant Industry, Soils, & Agric. Eng., Agric. Research Adm., U.S.D.A. and Assoc. Prof. of Agronomy, N. Carolina Agr. Exp. Sta., respectively.

did have a higher oil content. Tokyo matures in late October and Haberlandt matures in early October. About 1936 the T. W. Wood Seed Co. of Richmond, Va., introduced a variety named Woods Yellow which was reported to be a selection from Mammoth Yellow. Woods Yellow holds its seed fairly well, has a rather low oil content, and produces a rank, coarse plant somewhat difficult to combine. In recent years Woods Yellow has been the most popular variety, although Tokyo and Haberlandt have been quite popular in some areas.

CNS Popular

Another of the old varieties is Biloxi, a late, rank-growing, brown-seeded type. Biloxi has been largely interplanted with corn for soil improvement or for grazing. Several varieties, Palmetto, Missoy, Clemson, Nanking, and CNS, derived from introductions from Nanking, China, make excellent growth in the Upper Coastal Plain of South Carolina and Georgia. All of these varieties have low oil content and with the exception of CNS shatter quite badly. CNS is now grown to greater extent than any other variety in this group.

Varieties now recommended for North Carolina are Ogden and Roanoke. Ogden, developed by the Tennessee Agricultural Experiment Station, was first grown on a field scale in North Carolina in 1944, and has been well received by soybean growers. Ogden has a medium growth type, stands very well, has a good oil content, and shatters less than Tokyo and Haberlandt. Ogden will usually hold its seed at least 2 weeks after it has reached combine maturity. It matures about October 10 to 15. During the 1946 season Ogden demonstrated

that it could tolerate an excess of moisture better than some other varieties on the low lying poorly drained soils.

In the spring of 1946, the variety Roanoke was released from the North Carolina Agricultural Experiment Station as a result of cooperative research with the U. S. Regional Soybean Laboratory. Roanoke is a late-October-maturing bean, medium tall in growth habit, holds its seed extremely well, and has the highest oil content of any soybean adapted to the southern states. Its average oil content for the past 3 years at the Experiment Station farm near Raleigh is 21.9 percent as compared with 19 percent for Woods Yellow. Roanoke can be expected to give higher seed yields than Woods Yellow if plant nutrient requirements are adequately supplied. Since Roanoke is a taller growing variety than Ogden it has a greater tendency to lodge, especially on heavier soils. However, the added height is usually an advantage in the Upper Coastal Plain. Roanoke is also well adapted to the Coastal Plain of South Carolina.

A rather extensive breeding program was initiated in 1942 to develop better adapted varieties. This program was expanded in 1943 in cooperation with the U. S. Regional Soybean Laboratory. In addition to high yielding ability, improvement in seed holding, lodging resistance, chemical composition, seed quality, and disease resistance are considered highly important. During the past season (1946) approximately 25,000 F₂ plants and over 4,000 single plant progeny rows were grown for selection purposes. Approximately 500 new strains, mostly selections from crosses, were grown in replicated yield trials at several different

locations. Some of these strains give promise of improvement over existing varieties.

There is little hope for raising the low average yield for North Carolina to any appreciable extent by breeding alone. The production of a profitable yield of soybeans demands an adequate supply of plant nutrients and the success of soybeans in the Southeast will depend upon satisfying the nutrient demands. Unfortunately the soybean early gained the reputation of getting along without any fertilizer. In addition to being grown without the addition of any fertilizer, soybeans are also quite often grown in rotation with crops receiving only light applications of fertilizer.

When one drives through the Coastal Plain area in mid-summer potash deficiency as shown by foliar symptoms is readily apparent and wide spread. However, numerous experiments during the past few years have demonstrated that yield responses can be expected from potash applications even when plants appear to be making normal growth and show no foliar symptoms. Not so conspicuous but equally widespread is the need for limestone. Many of the soils of the Tidewater area have a pH value of 5 or below. These soils give excellent responses to applications of dolomitic limestone. However, liming in excess of pH 6.0 will cause manganese deficiency on some soils. Most of the Coastal Plain soils are better supplied with phosphate than with limestone or potash, but phosphate is equally necessary in producing satisfactory seed yields.

The present fertilizer recommendations for soybeans in North Carolina are as follows:

(1) Lime in accordance with needs as determined by soil analysis and

(2) Apply 400 pounds of 0-10-20 fertilizer per acre, unless beans are grown in rotation with a heavily fertilized truck crop.

A 40-bushel crop of beans removes approximately 30 pounds of P₂O₅ and 60 pounds of K₂O from the soil. Results during the past few years indicate that 30 to 40 bushels of beans per acre can be safely expected with the use of an adapted variety and a complete fertilization program.

On Coastal Plain Area

During 1946 nine variety-fertility experiments were carried to completion in the Coastal Plain area of North Carolina. These tests included the varieties Ogden, Roanoke, and the local variety; each variety was grown on limed and unlimed soil, with and without 400 pounds of 0-10-20 fertilizer. The average yield for the Ogden variety in these nine experiments was as follows: no treatment 22 bushels; lime alone, 24.8 bushels; 400 pounds 0-10-20, 27.2 bushels; lime plus 400 pounds 0-10-20 fertilizer, 34.4 bushels.

A good illustration of the need of a balanced fertility program are the results obtained in one of these experiments on the O. P. Wells farm in Duplin County on a Dunbar fine sandy loam. The Ogden variety

Fig. 2 — Soybeans planted on beds for drainage purposes on a low lying soil in the Tidewater area. Roanoke variety, seed yield 41 bu. per acre.





Fig. 3 — Woods Yellow variety left, Roanoke right, showing rapid early growth characteristic for Roanoke. Soybean variety-fertility experiment in Duplin Co. Seed yield of Woods Yellow 29.7 bu., Roanoke 36.4 bu.

produced 22.5 bushels with no treatment, 22.4 bushels with fertilizer, 32.8 bushels with lime alone and 37.7 bushels with lime and fertilizer. If this farmer had used only fertilizer with no lime he could easily have supported the long standing idea that fertilization of soybeans did not pay. His soil had a pH of 5.2 and 1 ton of dolomitic limestone was applied.

In another experiment on a Norfolk loamy fine sand very low in potash and having a pH of 5.8 the following yields were produced; no treatment, 5.0 bushels; lime alone, 2.6 bushels; 400 pounds 0-10-20, 22.1 bushels; lime plus 400 pounds 0-10-20, 31.9 bushels (see Fig. 1).

Returns from Fertilizers

Some will concede that fertilization might pay where yields are extremely low. However, in an experiment on an Elkton silt loam in Pasquotank County a yield of 42 bushels was obtained with no treatment and 48 bushels with application of 400 pounds 0-10-20 — a return of \$16.50 for a \$7.00 investment. In several instances yields of approximately 30 bushels have been obtained with no treatment and increases of at least 10 bushels obtained following treatment. While excellent yield responses have been obtained following applications of lime and an 0-10-20 fertilizer, there still may be other factors limiting yield in some instances such as the physical condition of the soil or minor elements. Either excesses or deficiencies of rainfall may seriously curtail yields but fluctuations due to weather are minimized with good fertilizer practices.

Along with an adapted variety and sound

fertilizer practices a good stand is essential to high yields. In an experiment conducted in the Tidewater area in 1944 using the Ogden and Volstate varieties with 12, 6, 4 and 2 plants per foot, the average yields of the two varieties were 42, 37, 32 and 25 bushels respectively. At another location the same year under extremely dry conditions no yield response was obtained.

Last year a farmer cooperator combined approximately 25 bushels per acre from his Haberlandi beans with an average stand of two plants per foot. His same seed planted in the variety-fertility experiment with an average stand of eight plants per foot at maturity produced 35 bushels per acre.

In addition to usually giving an increase in yield, the more thickly planted beans get off to a faster start and materially aid in weed control. This in itself is considered sufficient justification for thicker planting. Also from the standpoint of weed control, a 36-inch row is favored over a 42-inch row as the middles are more quickly and completely shaded and weed growth is retarded. Present rate of planting recommendations are to plant 10 to 12 seed per foot. When planting in 36-inch rows approximately 1 bushel per acre will be required with either Ogden or Roanoke varieties.

While research in varietal improvement, fertilization, diseases, and cultural practices will be continued, an active extension program under the supervision of Dr. E. R. Collins, in charge of Agronomy Extension is under way to make the 12-14 bushel state average yield a thing of the past. In 1947 each county agricultural agent in the Coastal Plain area of North Carolina had at least

one demonstration putting the best production practices known into use. This demonstration consisted of 1 acre limed in accordance with need at least 2 months before planting and fertilized with 400 pounds 0-10-20 fertilizer. Care was taken that the fertilizer was not in direct contact with seed. Good quality Ogden or Roanoke seed were planted at the rate of 10 to 12 beans per foot in 36-inch or 42-inch rows. Beans were planted in a well prepared seed bed between May 1 and 20th and cultivated to control weeds. One-half acre of beans were planted on either side of the demonstration acre and handled according to the farmer's usual practices.

Harvesting of these beans will help many farmers to realize that they too can produce a good yield of soybeans.

With the gradual decline in cotton acreage and improvement in corn fertilization practices, additional acres will probably be released for the production of other crops. Soybeans can readily fit onto this land and will produce profitable yields when adequately fertilized. Numerous cotton seed mills (hydraulic press type) each year process the present soybean crop and are interested in increased production. The expanding livestock industry gives promise of an expanding local market for protein feeds.

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JOINS B. I. WELLER CO.



H. C. EDWARDS, JR.

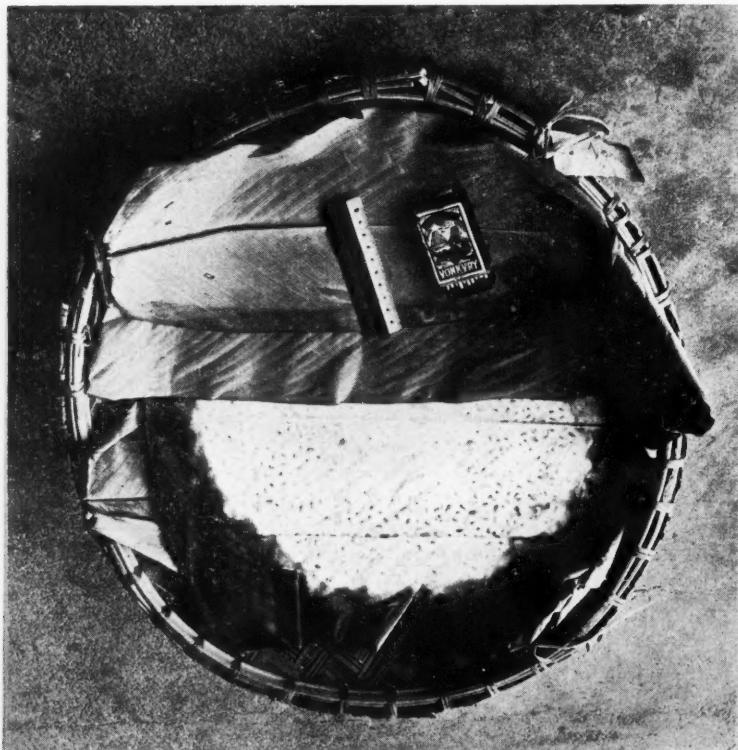
H. C. Edwards, Jr., formerly with the engineering and equipment divisions of The American Can Co., has been placed in charge of production of the Calumet super capacity elevator cup and other sheet metal equipment manufactured for grain elevators and flour mills by the B. I. Weller Co., Chicago.

During World War II Edwards served with the Naval Reserve as officer in charge of the O.G.U. at Great Lakes, Ill., and as executive and personnel officer of the Naval Training distribution center, Williamsburg, Va.



Above, an Indonesian girl sells tempe packed in large leaves in a Surinam market. Below, a large tempe 1-foot in diameter in a bamboo basket. Note the white fungus covering the tempe.

—All photos courtesy Journal of the New York Botanical Garden



Soy Foods on New Guinea

Toward the end of the war the U. S. government shipped a quantity of soybeans to New Guinea.

The soybeans were shipped on order of the Netherlands Indies Civil Administration. Soybeans are a common food in that part of the world. Men in charge thought they should help relieve the food shortage that the Japs had left behind them.

But nobody on New Guinea would eat the soybeans. The natives there had never eaten them in any form; and the Indonesians and Europeans on the islands were in the habit of consuming them only in the fermented form known as tempe. They could not make tempe from the American soybeans, for they had lost the special culture needed in tempe-making during the war.

The people of New Guinea had been making tempe before the war, from soybeans they imported from Java. When the Japs cut off imports in 1942, tempe-making had to be stopped. It is customary to inoculate each new batch of tempe from a piece of the previous batch. So when they quit making tempe the fungus was lost.

Authorities learned the fungus needed was the fast-growing *Rhizopus Oryzae*. Where could they get it? They knew the Javanese on Surinam were tempe-eaters. So they wrote Gerold Stahel, director of the experiment station there, and asked him to rush some of the tempe culture to New Guinea.

Broke Famine on New Guinea

Dr. Stahel was able to have some of the pure fungus cultures and some dried tempe cakes flown into New Guinea by plane in a little over a week. Soon the kitchens all over the island were making tempe. So the soybeans from U. S. farms, after they were inoculated by the cultures from Surinam, did help to break the famine on New Guinea.

We in the U. S. eat relatively few whole soybeans. We consider them hard and bitter. But the people of the East have learned how to overcome the bitterness and the hard texture we object to. They ferment the beans. By this process they make a number of palatable and wholesome foods. Two of these are a soy curd, or taahoo, and tempe, pictured here.

Dr. Stahel became interested in these soy foods on Surinam. He experimented with the production of both; and described at length the two foods and their manufacture in recent issues of the *Journal of the New York Botanical Garden*. The photos of these pages are from Dr. Stahel's article.

The Indonesians make the taahoo from soy milk. To make the milk they soak yellow soybeans in water, then grind them in a

Right top, a girl is folding soaked, fermented soybeans into a package of large leaves. After ripening for 2 days, the tempe will come out of the package covered with a white fungus. Center, a Chinese kitchen equipped with implements for taahoo manufacture. The white soybean mash flows slowly from the drain of the lower millstone into the cheesecloth bag hanging in the wooden barrel. Bottom, pieces of fresh taahoo, four-fifths natural size.

stone mill as shown on this page. They filter the grind through a cheesecloth (which can be seen hanging over the barrel in the center picture.)

The process is similar to that of making cheese from cow's or goat's milk. They add a kind of starter to the warm soy milk, which immediately begins to coagulate. Most of the resulting curd, or taahoo, is eaten fresh or baked in oil or lard.

Known Only in East Indies

Tempe is the most common soy food in the Netherlands East Indies but is unknown elsewhere. The tempe fungus grows at its best only in the permanently high temperatures of the tropics.

Dr. Stahel tells of visiting a Javanese peasant named Sinem to study her method of tempe-making.

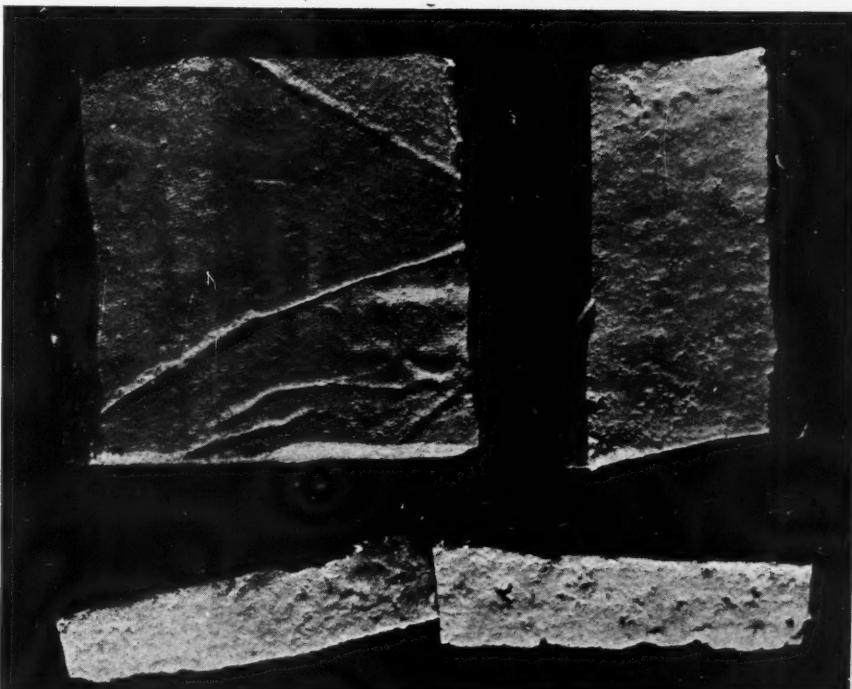
Sinem would boil about 6 pounds of the yellow beans in water for an hour. After cooling them, she trod the swelled beans with her feet to remove the seedcoats. Then she added water to cover and left them to ferment for 24 hours.

By this time the soybeans had a smell somewhat like that of sour milk. Now she boiled them to stop fermentation, and allowed them to cool. The beans were soft and a little mealy. Then she added a tempe cake, to introduce the culture, to each 5 pounds of beans. This she broke up and mixed with the heap, and allowed it to remain for about 2 hours.

After the cultures were removed the soybeans were ready to be packed in big monocotyledonous leaves for ripening. Thirty to forty grams of the soft, inoculated soybeans were put in the center of two or three leaves, one on top of the other. The margins and the ends of the leaves were folded over the beans and the whole was tied with a rice stalk or with raffia.

In 2 days the cakes inside the leaves were covered with a clean, white, luxuriant fungus growth. The tempe was now ready to be cut into strips and fried in coconut oil or butter. It had to be sold and eaten quickly, for it was highly perishable.

Dr. Stahel tried different substitutes for the big leaves which the Indonesians used for packaging and ripening the tempe. But none of these produced as well developed tempes as did the leaves.





The two men who played a large part in producing Hawkeye—Dr. Martin Weiss (left) and C. R. Weber. Weiss made the original cross between Mukden and Richland. Weber made the final selections. They are examining a row of Hawkeye.

The HAWKEYE SOYBEAN

**Equals Lincoln in
Yield and Oil, as Early and
Stands as Well as Richland**

By MARTIN G. WEISS

CHARLES R. WEBER

and ROBERT R. KALTON¹

THIS IS the story of the new soybean variety, Hawkeye. It is being released this year to growers in the northern half of Iowa and to those of some other states where it is adapted. You may have heard meager news about Hawkeye through the "grapevine" channel.

Here briefly are the high points of Hawkeye as we have found them through 4 years of testing in Iowa at five locations:

It yields about the same as Lincoln, but about 6 bushels more than Richland according to Iowa tests.

It is as early as Richland and suited to the same areas. It is a week earlier than Lincoln.

It grows 4 to 5 inches taller than Richland.

It is as good as Richland in its ability to resist lodging—to stand in the field until it is harvested. And Richland has been the best in this respect of any variety grown in Iowa.

Hawkeye is as good as Lincoln in oil content and Lincoln has been our best.

The count is pretty good for Hawkeye. It looks like at least a partial answer to the need of the farmers of the northern half of Iowa and areas of the same latitude east and west of Iowa for a taller, higher yielding soybean that would stand like Richland. Hawkeye will do just that. It is high yielding, early, stands well and is high in oil.

Where Can I Get Seed?

If you live in the northern half of Iowa you probably are asking, "Where can I get some seed." Actually, most of you will not be able to get seed to plant in 1948. There'll be only about five increase lots available to be placed in each county. The 1947 seed will be placed with a few carefully selected growers in the different counties for further seed increase. We do not select those who will get the 1947 seed. So don't waste your time and ours by writing to Ames for seed.

The farmers who get seed must have weed-free land and suitable equipment. Those with a definite interest in producing crops

¹Research Professor of Farm Crops; Assistant Agronomist, U.S.D.A., and Collaborator, Iowa Agricultural Experiment Station; and formerly Research Associate in Farm Crops, respectively.

for seed are preferred. About 8,000 bushels were produced in 1947.

The Birth of Hawkeye

Where did Hawkeye come from? It got its start and was developed at the Iowa Agricultural Experiment Station, Ames. The variety was derived from a cooperative project of the U. S. Regional Soybean Laboratory² and the Iowa Agricultural Experiment Station.

Hawkeye is a well planned product. It didn't just happen. The tiny flowers of the parent varieties, Mukden and Richland, were opened with tweezers. The anthers (which contain the pollen) were removed from the flowers of the Mukden before they had become fertilized. Then pollen from flowers of Richland was dusted on the pistils of the Mukden flowers. That was the cross. Richland, the sire; Mukden, the dam. That cross was made in 1938. The seeds produced from the cross were planted and the resulting plants were studied and tested. Single plant selections were made for five successive generations.

Even in the early stages we were watching and measuring the qualities of the various plants. In 1943 the final plant selections were made. We had decided that these selections were worth increasing. So 6 years after the cross was made in the field, we started increasing this new and then un-named variety.

When our data indicated these selections had promise they were tested in many states,

²The U. S. Regional Soybean Laboratory is a cooperative organization participated in by the Bureau of Plant Industry, Soils and Agricultural Engineering, Agricultural Research Administration, of the U. S. Department of Agriculture, and by 24 state agricultural experiment stations.

"Bob" Weber measures the height of a row of Hawkeye soybeans.



The men are harvesting soybeans from the USDA test plots at Strayer Seed Farms, Hudson, Iowa. Hawkeye is one of the varieties under test here.

beginning in 1943, by the U. S. Regional Soybean Laboratory.

What Hawkeye Looks Like

It resembles other varieties in various ways. Like Richland and Manchu, it has purple flowers. Like Mukden, Illini and Dunfield it has grey pubescence (the hair on the stems and leaves). Like its Richland parent it has stiff stems and stands well. Like Richland, the tip of the plant terminates with a cluster of pods. It has few short branches near the base of the plant.

An improved feature over Richland is that the beans are up off the ground. In Iowa it averages about 3 inches shorter than its Mukden parent and is 4 to 5 inches taller than its Richland parent.

Like Mukden the pods are a light brown color when mature. Also like Mukden the pods predominantly carry three seeds instead of two as in Richland. The seeds are slightly larger than Richland and considerably larger than Mukden.

The Hawkeye beans are a light yellow with a hilum color different from any other variety grown in the region to which Hawkeye is adapted. We believe you will welcome this, for it will give the farmer a good deal of protection from being sold a substitute which is claimed to be Hawkeye.

Record in Iowa

The results reported in Table 1 of Iowa tests were made at Cherokee, Marcus and Kanawha in northern Iowa and at Ames and Hudson in central Iowa. The results reported in Table 1 are for 4 years—1943, 1944, 1945, and 1946. (1947 results are as yet not available).

Table 1 will show you what we found—the yield, lodging score, maturity date and height. In this table you can compare

Hawkeye with Earlyana, Richland, Mukden and Lincoln in northern Iowa. In central Iowa the table will show you how it stacked up against Earlyana, Richland, Mukden, Lincoln, Dunfield and Illini.

The lodging "score" figures mean this: If the plants were nearly erect—all standing up—the score was 1; if most of the plants were down the score was 5. So 1.6 in northern Iowa means that most of the plants of Hawkeye and Richland stood up well. They were much better than any of the other varieties. Hawkeye and Richland were practically the same in ability to stand in central Iowa—considerably better than any other variety.

You will note that Hawkeye averaged about 4½ bushels more in yield than Richland or Earlyana in northern Iowa. And even in central Iowa, where Hawkeye is earlier than it needs to be to mature, it was so close to Lincoln (the best yielding variety for the region) that there was no practical difference. In central Iowa, Hawkeye outyielded Dunfield and Illini. Usually varieties which can utilize the entire growing season without getting caught by frost will yield the highest. Here is a variety a week earlier in maturity than Lincoln that for all practical purposes yielded as well.

These tests in Iowa gave uniform results. That is, Hawkeye performed about the same in comparison with the other varieties not only as an average for the 4 years, but for each one of the years. It was consistent. We can feel fairly certain from these 4 years of testing that Iowa farmers should get comparable results.

Record Outside Iowa

Hawkeye has had a lot of testing by the U. S. Regional Soybean Laboratory, not only

in Iowa but in other states in cooperation with their agricultural experiment stations. This testing over a wide area has made it possible to release Hawkeye earlier than if it had just been tested in Iowa. The tests in other states show that Hawkeye is well adapted to northern Ohio, southern Michigan, northern Indiana, northern Illinois, southern Wisconsin, northeastern Nebraska and southeastern South Dakota. Therefore these states are also releasing Hawkeye to their growers. We have already pointed out that it is better for northern Iowa than any other variety we have been growing. It is likely to stand in the same role in the regions of these other states named.

The record of Hawkeye in 74 tests during 1943, 1944, 1945 and 1946 in the eight states (Iowa, Illinois, Indiana, Ohio, Wisconsin, Michigan, Nebraska and South Dakota) is shown in Table 2. The average for these wide tests is just about the same as we found in Iowa. That is, Hawkeye held the same position when compared with the other varieties. It beat Lincoln in erectness (lodging score), it was practically the same as Lincoln in yield (1.1 bushels less), matured 7 days earlier than Lincoln, was 3 inches shorter. A comparison with the other varieties will show that on the average, all states included, the record is almost a duplicate of what we got in Iowa.

It's High in Oil

Processors of soybeans—the people who buy the beans—prick up their ears when they find how beans rate in the amount of oil they carry. Hawkeye ranks right with the best variety we have had—Lincoln. These two are better than any others. These results were found in the Hawkeye when grown in Iowa and in other states.

ANNOUNCEMENT

Under the patents of the Iowa State Research Foundation a new and proven small plant is now in process of development for the efficient extraction of soybean oil by the safe solvent method, using non-inflammable solvent. It will pay you to wait.

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TABLE 1
The Record of Hawkeye and Other Varieties in Iowa
(1943, 1944, 1945 and 1946)

Variety	Bushels per Acre	Lodging Score*	Maturity	Height (in.)
Northern Iowa (Cherokee, Marcus, Kanawha) 1943 Through 1946 — 8 Tests				
Earlyana	33.6	2.8	9-24	40
Richland	33.3	1.6	9-28	36
Hawkeye	37.9	1.6	9-29	40
Mukden	32.8	2.5	10-3	43
Lincoln	38.2	2.8	10-5	41
Central Iowa (Ames, Hudson) 1943 Through 1946 — 7 Tests				
Earlyana	34.5	3.0	9-21	41
Richland	32.9	2.0	9-27	35
Hawkeye	40.6	1.9	9-28	40
Mukden	36.6	2.7	10-2	43
Lincoln	41.0	2.8	10-4	42
Dunfield	35.9	3.3	10-6	43
Illini	38.1	3.4	10-6	46

*Lodging—A score based upon (1) nearly erect to (5) prostrate.

Hawkeye's Future

We believe our tests are ample to show that Hawkeye is far better in most ways for the area in which it is adapted than any other variety. No doubt some day we shall have still better ones. But soybean breeding is a long process, as the story of Hawkeye shows. Ten years will have passed from the time the cross was made from which Haw-

TABLE 2
The Record of Hawkeye and Other Varieties in Regional Tests
(Combined Results from Iowa, Illinois, Indiana, Ohio, Wisconsin, Michigan, Nebraska and South Dakota—1943, 1944, 1945 and 1946.)

Variety	Bushels per Acre	Lodging Score*	Maturity	Height (in.)
No. of Tests	74	71	59	72
Earlyana	28.4	2.8	9-22	37
Richland	28.3	1.6	9-28	33
Hawkeye	32.1	1.6	9-28	36
Mukden	29.5	2.3	10-2	39
Lincoln	33.2	2.2	10-5	39
Dunfield	28.2	3.0	10-5	39
Illini	30.3	3.1	10-6	43

*Lodging—A score based upon (1) nearly erect to (5) prostrate.

eye came until farmers are growing it. And Hawkeye is still 2 or 3 years from production in amounts sufficient for the processor.

If the majority of farmers who want this improved variety are to get seed for planting, then all of that grown in 1948 must be used for seed. In the meantime, let's do what we can to speed production and make seed available to other farmers who want it at reasonable prices. Iowa and other states have plans for doing that. In the meantime be patient—continue to grow Earlyana, Richland, Lincoln or the other varieties which are recommended for your area.

SEE BITTER COTTONSEED-SOY OIL BATTLE

A bitter competitive battle between soybean and cottonseed oils for major consuming markets is predicted for the 1947-48 crop year by J. A. Ryan, vice president of C. F. Simonin's Sons, Inc., of Philadelphia, reports *New York Journal of Commerce*.

Producers of soybean oil will fight hard to retain the markets they acquired during World War II as the direct result of desperate shortage of vegetable oils and fats, Mr. Ryan said in an interview.

"Traditionalists familiar with the prewar conflict between cottonseed oil and lard and not intimately in touch with the events of the past few years during which consumption of soybean oil has increased tremendously, have been chiefly concerned recently with the movements in the lard market caused by damage to the corn crop.

"They argue that the shortage of corn during the coming crop year means higher prices for lard and its competitive commodities. Overlooked, however, are several important factors in this connection:

"Burdensome lard stocks now on hand, and the anticipated heavy liquidation of hogs during the next few months, will increase already large supplies.

"And another important factor is the impact upon a free, uncontrolled market of a large supply of soybean oil from the new crop. This oil with a ready consuming mar-

ket will not lightly accept any secondary place to cotton oil."

—sbd—

ADVANTAGES OF SOY

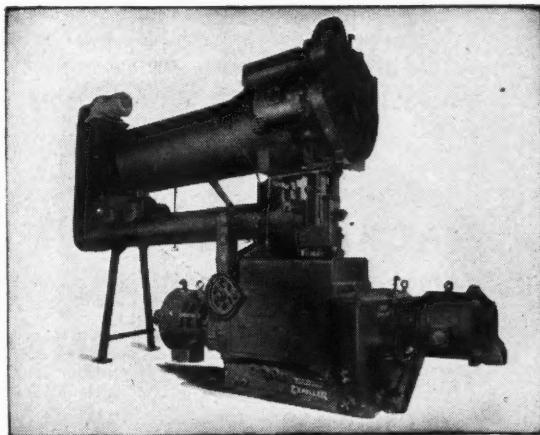
"Soybean oil has certain very definite quality advantages over cottonseed oil to the manufacturing consumer," said R. R. King, technical director to Mrs. Tucker's Foods, Inc., Sherman, Texas, before the recent annual short course for oil mill operators at College Station, Texas.

"It is more of a natural salad oil, requiring no removal of stearine by winterization. It bleaches to a very low color incidental with its hydrogenation. It has a much greater resistance to oxidative rancidity when hydrogenated.

"There is only one major deficiency in soybean oil that gives cottonseed oil its present superior price and quality position. That is its tendency to develop an objectionable off-flavor on age. The soybean oil producers recognize this as their one great problem, and every resource of that industry is directed toward its solution.

"This problem of soybean oil flavor reversion will very likely be solved, and it could be very soon. Then the advantageous competitive position that cottonseed oil has enjoyed would be wiped out."

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"J. C." HACKLEMAN -- PRACTICAL SOYBEAN SALESMAN

Professor J. C. Hackleman, University of Illinois extension agronomist and past president of the American Soybean Association, has for many years been a soybean enthusiast. He is a practical salesman who has full confidence in the high qualities of the product. His knowledge and enthusiasm early helped to convince both producers and processors that the immigrant soybean would become a valuable citizen.

"J. C." is a graduate of Purdue University, and holds the degree of Master of Science from Missouri. He served on the staff of the University of Missouri before going to the University of Illinois in 1919.

Not only did he serve Illinois farmers diligently in connection with crop production practices, but he was active in the organization of the Illinois Crop Improvement Association in 1923 and served as its secretary for 15 years.

"J. C." also served two terms as secretary of the International Crop Improvement Association and was made president of the International Association in 1933. More recently he was called upon to serve as a consultant and adviser in connection with the wartime national soybean production and pricing programs.

During all of his 27 years of service at Illinois, Professor Hackleman has directed soybean demonstrations in Illinois counties and assisted with the soybean investigations of the Agricultural Experiment Station. He is well known as a grain judge, and has been called on repeatedly to serve in this capacity at the International Grain and Hay Show at Chicago, as well as many other grain shows and state fairs.

Mr. Hackleman was elected an honorary life member of the American Soybean Association at the 1947 convention.

APPROVE OIL FLAVOR RESEARCH

Research aimed at enhancing the flavor of soybean oil and how to retain good flavor in such oil has been approved under the Research and Marketing Act of 1946, the U. S. Department of Agriculture has announced. The studies will be conducted by the Bureau of Agricultural and Industrial Chemistry's Northern Regional Research Laboratory at Peoria, Ill., and will be coordinated with related work by the states and by private industry.

Although considerable progress has been made toward solving the flavor problem of soybean oil, the cause of flavor deterioration after processing is still unknown. Scientists declare that before a permanent solution can be found, new and fundamental research is required to detect, isolate, and identify the constituents of soybean oil that are responsible for objectionable flavors. This the present project will strive to do and with this knowledge as a basis will seek to enhance flavor stability.

Why Important

The importance of the problem is indicated by the fact that soybean production in this country has increased from 9 million bushels in 1929-30 to 197 million bushels in 1946-47, or more than a twenty-fold increase. Soybean production now fills a vital need of our agricultural and our total economy, Administrator E. A. Meyer said in approving this project. Not only does the American farmer have a big stake in soybean and soybean oil problems from the standpoint of income to soybean producers, but this crop also provides a large inexpensive source of high-protein animal feed. This, Meyer said, together with the approximately 1 billion pounds of oil refined annually for human use, is highly important to American consumers.

Recommendations of the soybean advisory committee include the statement that "The most urgent problem, by far, now engaging the attention of research workers in the soybean-oil industry is to improve the flavor stability of soybean oil."

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OILSEED RESEARCH

Members of the research committee of the National Cottonseed Products Association have unanimously authorized fellowships or grants to encourage production research on the development of oilseed crops during the next 2 years, reports *Cotton Gin and Oil Mill Press*.

Action on the fellowships was taken at New Orleans October 3, at a meeting with Dr. Francis E. Johnstone, association agronomist, and A. L. Ward, educational service director. Dr. Johnstone made a full report on his survey of the status of oilseed crops research in cotton states.

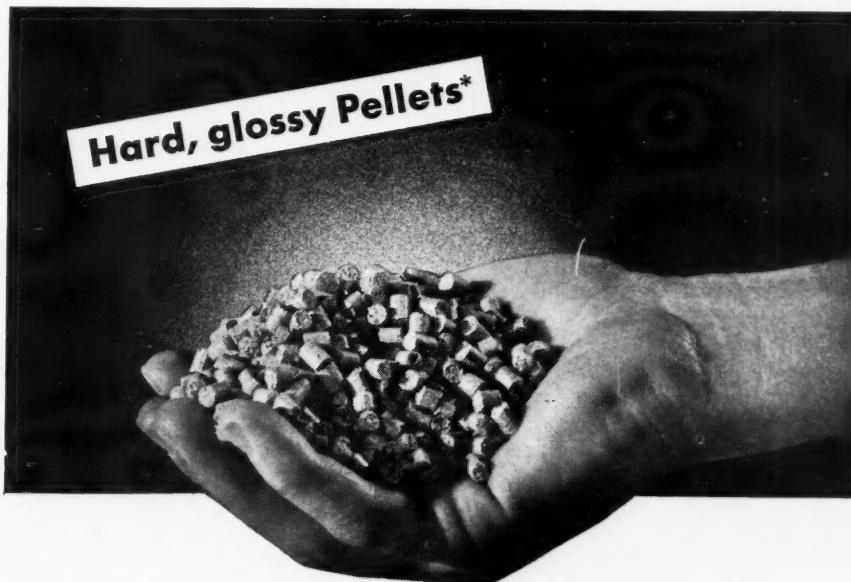
Sesame, okra, sunflowers, squashes and gourds, and a miscellaneous oilseeds project were selected for initial research fellowships. Institutions were selected for fellowships on the basis of availability of adequately trained personnel and the interest and cooperation in oilseed crops shown by the personnel.

In the case of cotton, it was decided to encourage present and prospective research through cooperation other than fellowships or grants at the present time.

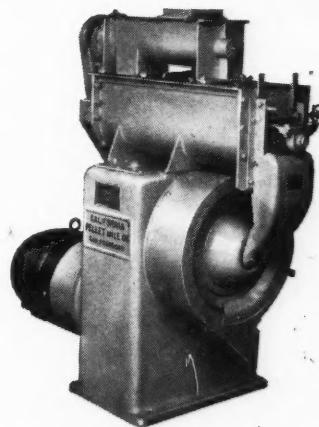
"WONDER BEAN" ON ABC

Development of the soybean to its present major role in agriculture and industry was the subject of a 15-minute program entitled "The Wonder Bean," broadcast as a sustaining program October 28 over the ABC network of radio stations.

The program was one of the "Let Freedom Ring" series of broadcasts sponsored by the United States Chamber of Commerce. It related the story of the late A. E. Staley's interest in soybeans, how the company he founded and which bears his name began processing soybeans 25 years ago, and how soybeans have become the fourth largest cash grain crop in the United States.



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SOYBEAN OIL MEAL

Gains in the South

By A. D. HARLAN

• Condensed from an article by the author in FEEDSTUFFS. Mr. Harlan recently resigned from the grain branch, U. S. Department of Agriculture, to establish a feed and grain brokerage business in Atlanta, known as Yancey & Harlan.

Thanks to the rapid increase in soybean production during the past few years, we have an abundance of vegetable protein such as we never had before. I look for an eventual increase above present levels as we still have too many feeders in this country who are giving their livestock and poultry a protein deficient ration.

The South, through cottonseed meal, will probably never again dominate the oilseed meal field. In 1946, we raised the smallest cotton crop since 1895. It amounted to only 8½ million bales.

Decline of Cottonseed

There is considerable question in my mind as to whether we will ever grow much above a 12-million-bale crop again, because it is doubtful whether we can dispose of as much as 12 million bales of American cotton a year if sold at our domestic price level. A 12-million-bale cotton crop means only about 1,800,000 tons of cottonseed meal. We are now consuming 6 million tons of oilseed meals, so it looks like the national dominance of cottonseed meal has gone for all time.

Bear in mind, however, that we will always have cottonseed meal production regardless of its price level. Cottonseed, as a by-product of cotton production, will be produced whether seed sells for \$9 a ton, as in 1931, or over \$100 a ton in some cases in the latter part of the 1946-47 season. No other oilseed can maintain a high level of production under adverse economic conditions as well as can cottonseed.

The area of production of cottonseed meal may be roughly divided into three fairly equal parts—the Southeast, the Mississippi Valley and the Southwest. For a number of years the Southwest has consumed at home all of the cottonseed meal it produced. In fact, it is now on a net import basis.

The Mississippi Valley for a number of years has furnished most of the surplus cottonseed meal. This surplus goes mainly to the Midwest, although shipments are also made to the Northeast, Southwest and parts of the Southeast. In the valley and adjacent areas, however, livestock production is on the increase so that more meal is consumed at home. The Southeast is now firmly established in livestock, dairy and poultry production. Eventually we will consume practically all of our cottonseed meal at home.

Southern mixers have turned more and more to soybean meal to supplement locally produced cottonseed and peanut meals. This movement was speeded up during the war years when feeders and mixers were struggling to obtain vegetable protein from whatever source possible. The crushing of Mid-

western soybeans by southern oil mills during the war made more soybean meal available to the South in its time of greatest protein need.

The production of soybeans in certain southern areas, notably on the alluvial soils from southeastern Missouri southward, has shown a gradual increase in recent years. The lower Mississippi Valley is particularly adapted to soybean production for oil mill purposes and, I believe as I have for 15 years or more, that *this section will eventually prove an important factor in the national soybean situation*. Eastern North Carolina is our oldest section of soybean and soybean oil meal production and from there it has spread into eastern Virginia.

Other, but smaller, areas of production are developing and expanding. Apparently soybean production for oil mill purposes will be an important feature of southern agriculture as long as soybeans can be grown at a profit anywhere in the country.

Broiler Increase

One of the outstanding factors in the increased use of soybean oil meal in the South is the remarkable development of commercial broiler production. Ten years ago very little was being done in this field. In 1945, the broiler production in Virginia was 22 million, in Georgia 22 million, in Arkansas 16 million and in Texas 12 million. Similar but smaller developments have been going on in some of the other southern states. Probably 90 percent of the vegetable protein used in poultry mashes fed in the South consists of soybean oil meal.

While no statistics on the subject are available, I am confident that soybean meal consumption in the states south of the Ohio and Potomac Rivers and east of the Mississippi Valley is greater than the shipments of cottonseed meal from that area to other sections of the country. The lower Mississippi Valley, however, still ships out a larger volume of cottonseed meal than it consumes of soybean meal. Even in the Southwest, increasing quantities of soybean meal are being brought in. Definitely, soybean meal is in southern markets to stay.

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Iowa Processing Plant Burns



—Photo Eagle Grove Eagle

Photo of the Boone Valley Cooperative Processing Association plant fire at Eagle Grove, Iowa, August 23. Damage was estimated at \$225,000. Picture was taken at the height of the fire just after the elevator tower and cupola toppled into the main factory building. Exploding barrels of soybean oil fed the flames and added to the smoke at the time. The Association will rebuild the plant. Contract has been let to Weitz Co., Des Moines. Officials expect to resume processing February 1.

BOOKS

THE GERMAN OILSEED INDUSTRY. By W. H. Goss. 248 pages, illustrated. Hobart Publishing Co., Washington, D. C. Price \$17.50.

The author is now associate director of research and development for Pillsbury Mills, Inc. Until recently he was assistant to the director of Northern Regional Research Laboratory, Peoria, Ill.

The volume is a compilation of reports prepared by Goss immediately after the collapse of Germany. He conducted an investigation of the German oilseed processing and refining industries for the Joint Chiefs of Staff.

He examined nearly all the important industrial plants in Germany where oilseeds

or vegetable oils were processed, and prepared detailed descriptions of the equipment and processes employed.

"Germany was once a leader in the development of oilseed technology, but the processes used and products made in American mills at the present time appear vastly superior to those observed in German factories," says Goss. "A strict comparison is not justified in every case, however, because the consuming markets are vastly different in the two countries. An attempt has been made to explain the differences and reasons therefor between the German and American practices. Some of these comparisons, particularly in the case of soybean oil, seem to deserve consideration by American operators.

"The chief reason for the superiority of American methods and products is the vastly greater quantity and quality of scientific

research conducted on fats and oils in the U. S."

THE CHEMICAL COMPOSITION OF FOODS. By R. A. McCance and E. M. Widdowson. Second revised edition. 156 pages. \$3.75. Chemical Publishing Co. Order through *Soybean Digest*, Hudson, Iowa.

In the quantitative study of dietetics and nutrition it is essential to have a thorough knowledge of the chemical composition of foods.

This book supplies data in the form of tables, two sets of which are included; the first lists composition per 100 grams; the second tabulates composition per ounce.

The following constituents are listed: Water, sugar, starch, and dextrans; total nitrogen, protein, fat, available carbohydrates and calories; the elements—sodium, potassium, calcium, magnesium, iron, copper, phosphorus, sulfur and chlorine; and acid-base balance expressed in cubic centimeters of n/10 solution.

To those associated with food industries, dietitians, physicians, nurses, food and research chemists, this book should be of great value.

Soy flour is the only soybean product included.

FATTY ACIDS, THEIR CHEMISTRY AND PHYSICAL PROPERTIES. By Klare S. Markley, principal chemist, oil, fat and protein division, Southern Regional Research Laboratory. 668 pages. \$10. Order through *Soybean Digest*, Hudson, Iowa.

The purpose of the volume is to bring together in an organized and readily accessible form as much as possible of the present accumulation of facts and data pertaining to the chemical reactions and physical properties of the fatty acids and, especially, of the long chain fatty acids which comprise the building stones of all natural fats, oils and waxes.

This book should obviate many hours of searching by technical people who are inter-

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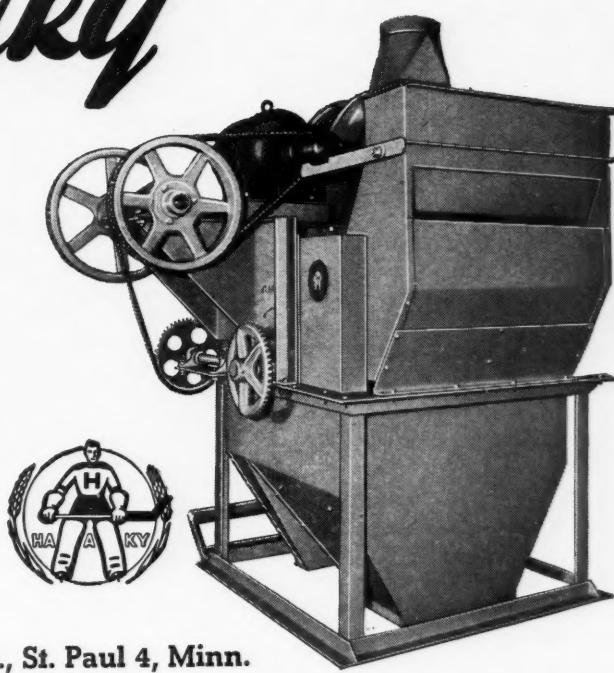
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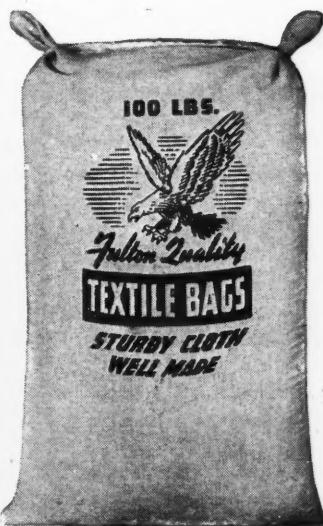
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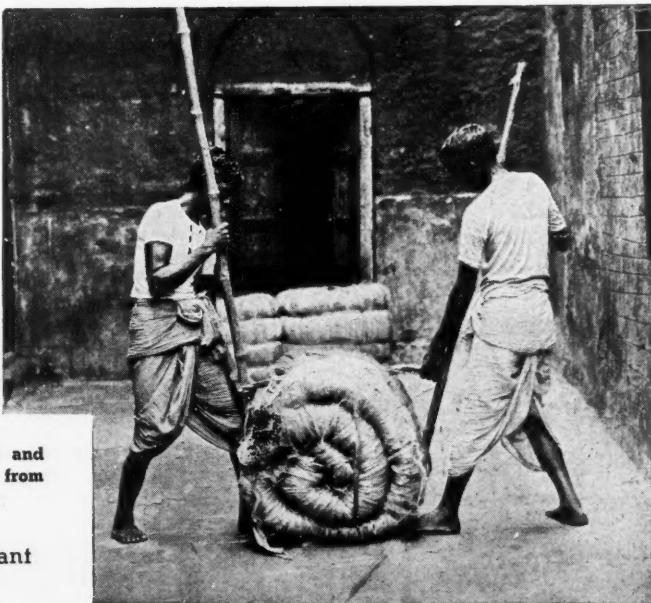
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ested in the fatty acids, their products and by-products.

Markley is co-author with W. H. Goss of *Soybean Chemistry and Technology*, well known in the soybean industry.

A large body of references to soybean oil is included in the present book.

FOOD PRODUCTS, by Saul Blumenthal. Consultant food technologist Shirley Laboratories. 986 pages. \$12. Order through *Soybean Digest*, Hudson, Iowa.

This comprehensive manual will be welcomed by all who have any interest in the food and related industries. It contains a great deal of information on popular and basic food ingredients with which every plant superintendent, food chemist, section foreman, food manufacturer and salesman should be familiar, and yet is not too technical for the lay reader.

The author has compiled the results of his many years of experience in the manufacture of foods, and has also included methods developed and used by other specialists in this field.

Here are practical, factory-tested formulae for making hundreds of commercial food products in the canning, flavoring, beverage, confectionery, essence, condiment, dairy, meat, fish and allied industries.

Soy products include whole soybeans, soybean oil and flour, soy curd and soy sauce. There are tested formulae for breads, doughs, doughnuts, and cakes employing soy flour.

— s b d —

IMPROVED OIL

A greatly improved food oil has resulted from the splitting of soybean oil into two fractions, reported Dr. Stewart W. Gloyer of the Pittsburgh Plate Glass Co., in a report to the meeting of the American Chemical Society in New York.

Dr. Gloyer described a recently developed technique for splitting natural vegetable and animal oils which can yield valuable raw materials for food or paint industries.

Splitting of soybean oil into two fractions

yields a fast-drying oil in addition to the new food oil.

Moreover, minor changes in the process will permit recovery of a by-product rich in vitamin E.

Dr. Gloyer revealed that the process is dependent on the use of selective solvents with which the oils are not completely miscible at operating temperatures. One of the fractions consists predominantly of the solvent, which contains the fast-drying oil prized by the paint industry, and the other fraction contains less active oils used in the food industry.

— s b d —

NEW OIL BY A-D-M

Another in the constantly growing family of improved, uniform soybean oils offered to paint manufacturers by the Archer-Daniels-Midland Co. is Poly M-17 soybean oil. In a group of kettle bodied soybean oils, Poly M-17 is characterized by good color, high viscosity and medium acidity. It is recommended for use in fortifying

paints, enamels, printing inks, varnish blending, putty and caulking compounds. Poly M-17 is outstanding in emulsion type and the so-called "One Coat Flat" interior wall finishes.

Compared with linseed oil, the most widely used paint oil, unmodified soybean oils are characterized by slow drying and soft films. However, oils modified by blowing, kettle bodying, chemical treatment, addition of catalysts and fractionation show vastly improved properties. These improved soybean oils, such as Varsoy, Ardlol, Soyagel, Soya 705, Soyalene, ADM No. 150 oil, Snowflake, and OKO in addition to Poly M-17, are comparable in many respects, and superior in some, to linseed oil as used in the protective coating industry, says Archer-Daniels-Midland.

— s b d —

A total of 438,116,000 pounds of soybeans and soybean products was used by the breweries during July, reports *Modern Brewery Age*.

Transport Soybean Oil by Truck



—Photo American Paint Journal

Users of processed oils in the San Francisco Bay area are now being served by motor "highway tanker" of Dorward & Sons Co. The tanker is of the latest streamlined design, with five compartments of 600 gallons each for the handling of various oils including soybean. Dorward officials believe this method of handling such oils is the first such operation in the Bay area.

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LIGHT U. S. SOYBEAN CROP

Reports from *Soybean Digest* correspondents indicate that the soybean crop will fall below U. S. Department of Agriculture's Oct. 1 forecast of 180 million bushels.

Many, though not all of the heavy producing areas, reported lighter yields than earlier expected.

Most of the crop was mature by frost date, and clear, dry weather was ideal for harvesting. Only drawback was heavy infestations of weeds in some areas which remained green due to late frosts and held back combining.

Most soybeans coming to market graded well with more than the usual amount of weed seed reported from some areas.

The peak market load was handled with less trouble this year than in the past, which may have been due to a number of factors. Elevators were better prepared to handle the crop. The market run was lighter because of the smaller crop, and also probably due to the fact that more soybeans were being held on farms or stored in elevators.

Many of our correspondents report more farm storage; though the opposite is true in some localities where farmers are afraid of the future price situation.

Reports of *Soybean Digest* crop reporters follow, for Oct. 28 unless otherwise specified:

ARKANSAS

L. M. Humphrey, R. L. Dorch Seed Farms, Scott, for Little Rock area: About 60% harvested. Per acre yield about 60% of 1946 crop. Due to slight increase in acreage total 75% of 1946. Reduction in yield due to July and August heat and drought. Some insect damage. Beans grading fair to good.

Jacob Hartz, Stuttgart, for east central: (Oct. 25) 40-50% harvested. Total yield 45-50% less than 1946 due to most severe drought since 1936. Beans are maturing very unevenly, causing high moisture. A killing frost would help. Beans grading No. 2 and 3. 25-30% more going into farm storage than in past.

ILLINOIS

Russell S. Davis, Clayton, for extreme west central: 90% harvested. Total yield less than half of 1946. We have a lot of fields under 10 bu., very few up to 20. Wet planting season and dry summer did the damage. Most beans dry enough but quite a few have too many green weeds. No killing frost yet. A few very late and weedy fields will have to wait for frost before they can be harvested.

Walter W. McLaughlin, Decatur, for Decatur area: 90% harvested. Total yield 80-85% of 1946. Beans grading mostly No. 2. More than usual going into storage.

A. J. Surratt, agricultural statistician, Illinois and U. S. Departments of Agriculture, Springfield: (Oct. 29) 80-85% harvested—

a week ahead of usual. Not quite up to record of 89% last year, but equals or betters other years of good progress. Combining exceptionally well advanced following favorable October weather in central and northern Illinois. Progress slower in southern half of state. Larger part of crop remaining in southern third. Returns largely under expectations. Yield likely will wind up 1/2 to 1 bu. below Sept. 1 estimate of 19 bu. 1946 yield was 23.5 bu. Total yield 80-83% of 1946. Damage mainly from drought and stunting of vine growth particularly in west central and across lower central parts of state. Size of beans mostly below average. Beans grading good, but dockage for weed

seed more than usual as Illinois has not had significant frost except in northern counties to kill green grass and weeds in fields.

Frank S. Garwood, Stonington, for south central: 90% harvested. Yields slightly less than estimates and less than 1946. Damage from drought was considerable. Beans grading mostly No. 2. Considerable amount of foreign matter has affected grading this year. Lack of frost or freeze has made the weed seed content of soybeans much higher than for many years as it was impossible for most combines to blow out this seed. Very few combines have any other method of eliminating weed seed. There is possibility that excess amount of green weed seed may cause storage damage.

H. I. Cohn, Valley Farms, Wright, for west central: Per acre yield lower than most earlier estimates. Run from 40% to 90% of

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1946, depending on date of planting and amount of rainfall. 95% harvested. Total yield around 80-85% of 1946. Drought damage up to 60% on beans planted in May and June and on which practically no rain fell during critical period. Some beans planted as late as July 18 made 25 bu. Beans grading mostly No. 2. Only a few beans being stored for seed.

J. E. Johnson, Champaign, for Champaign and adjoining counties: 98% harvested. Yield will average 5 bu. per acre lower than 1946. More yields under 20 bu. than over. Only normal yield was where local showers fell. Our first good rain since July 1 started Oct. 25 and continued until noon today (Oct. 28). Weather was ideal for harvesting with perhaps weediest condition for some years. Plants short and podded very close to ground; in order to get most of beans there was a larger amount of dirt picked up than a normal year. This added to dockage headache. Not practical or

humanly possible to expect local grain points to have any degree of accuracy where it is very common to have beans coming in from 20 to 25 combines in an afternoon. Whoever was instrumental in getting this dockage change did a real injustice to local grain dealers. Some points will do well to break even financially in handling the crop. The matter of dockage is a "hot potato" with the damage falling on the local grain man and not generally on the grower as we assume it was intended. This is a matter that deserves attention and should not be delayed. 25% more farm storage than last year. Most grain points have prepared some type of storage to meet usual car shortage.

INDIANA

J. B. Edmondson, Danville, for south central: (Oct. 26) 85-90% harvested. Yield 20% higher than earlier estimates, total 110% last year. Considerable pod and stem blight, particularly on early planted fields. Quality impaired badly in some cases. Weeds

at harvest time worst in history of crop. Beans grading No. 2 with moisture no factor. Weed seed main cause of any discount. Fewer beans being stored on farm than usual due to fear of future compared with present high price. 3 weeks of dry warm weather started all combines going at once, without interruption. This resulted in tremendous influx of beans. Handling facilities proved remarkably efficient. This area seems to be one of the most favored in state for both soys and corn.

Peter J. Lux, State AAA, Indianapolis: 85% harvested. 6% increase in total yield. Beans exceptionally dry with little dockage. 5% more going into farm storage than 1946.

Ersel Walley, Walley Agricultural Service, Inc., Fort Wayne, for northeast Indiana and northwest Ohio: (Oct. 30) 90% harvested. Per acre yield 30% less than 1946. Total yield 90% of 1946 due to increased acreage. Late beans cut 5-8 bu. per acre by frost. Grading No. 2. At least twice as many going into farm storage as in past. Lots of beans stored in local elevators.

IOWA

A. J. Loveland, State PMA Committee, Des Moines: 80% harvested. Total yield 75% of last year. Beans grading good. Twice as many beans going into storage as in past.

Leslie M. Carl, state statistician, Des Moines: (Oct. 30) 83% harvested Oct. 25. Final per acre yield may be 15-15½ bu. (Oct. 1 estimate 16 bu.) Brown leaf spot prevalent in a few localities this year. About same going into storage as past years, though some areas indicate farmers have not sold yet.

Howard L. Roach, Plainfield, for northeast: (Oct. 25) 100% harvested. Per acre yield 65% of 1946; total yield 75%. Beans grading No. 2. About same amount going into farm storage as in past.

Martin G. Weiss, farm crops department, Iowa State College, Ames: 70% harvested. Estimated per acre yield 15 bu. Total down 6 million bu. from 1946. Drought damage 25%. A bit of disease damage from pod and stem blight and bud blight. Beans grading mostly No. 2. Some estimates of 60% storage on farms.

KANSAS

E. A. Cleavenger, extension division, Kansas State College, Manhattan, for eastern: 60% harvested. Yields varying greatly between communities. 6-8 bu. in droughty areas; 10-14 bu. in better rainfall areas, and a few reports of 25 bu. Total yield 80% of 1946. Beans are small but not shriveled. Generally grading No. 2. 25% less going to farm storage than in past.

MINNESOTA

R. E. Hodgson, Waseca, for south central: 95% harvested. I'm guessing a little more acreage and a trifle less yield than in 1946. Beans grading No. 2. Moisture 11-12%, less than last year. Perhaps a little less beans going into storage than in past years. Farmers afraid of prices. Cars are available local-

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ly but hard to get in southern Minnesota. Commercial storage pretty well filled.

MISSISSIPPI

Lacy S. Stoner, Holly Bluff, for Yazoo County: 90% harvested. Per acre yield not as much as we had at first estimated but about same as 1946. Drought caused damage to extent of 5 to 10 bu. per acre. Beans grading good. A few more beans being stored on farm than in past, but will be used for seed.

MISSOURI

Harry A. Plattner, Malta Bend: 90% harvested. Yield 10% above earlier estimates. Drought caused 25% damage. Most beans grading No. 2. Most being sold direct.

E. M. Poirot, Golden City, for southwest: (Oct. 25) 100% harvested. Yield 25-40% of 1946. Drought serious. Most beans No. 1, but quality lower than last year. Less being stored on farm than in past.

NEBRASKA

Fremont Cake & Meal Co., Fremont, for east central: (Oct. 24) 75% harvested. About 10-15 bu. per acre will catch most beans. Total yield 80% of 1946 due to increased acreage. Beans show 8-10% moisture. About 35% more farm storage this year.

J. C. Swinbank, Lincoln, for east central: (Oct. 31) Yield better than expected but not as good as 1946 crop. Summer drought interfered with best development. Considerable late planting due to excessive spring moisture. Beans grading very good. Moisture content 11% or less.

NORTH CAROLINA

Frank Parker, agricultural statistician, Raleigh: Almost none harvested. Pessimistic now about yield. Too much wet weather. Total yield 110% of 1946. Some mildew-rot in hull on plants reported. Growers anxious to get into fields with combines. Too wet. Conditions and prospects quite variable.

NORTH DAKOTA

C. J. Heltemes, agricultural statistician, Fargo: Approximately 100% harvested. Per acre yield less than in 1946. Frost stopped growth about Sept. 21-22. Some green beans due to frost and late seeding. In some cases beans are small. In Fargo area are grading mostly No. 3. Not much tendency to hold beans on farm. Our crop not important compared with some states. Grown mostly in eastern third.

OHIO

G. G. McIlroy, Irwin, for west central: 98% harvested. Total yield 90% of 1946. Late beans damaged 3-5 bu. per acre by frost last week of September. Beans grading about as usual except frosted beans smaller in size. Increase of 20% in farm storage.

D. F. Beard, extension agronomist, Ohio State University, Columbus: 80-90% harvested. Yield 5-10% under 1946. Frost ruined a few very late fields and hurt others, but total net effect of frost not as serious as first thought. Beans grading

better than expected—very dry. More beans going into farm storage. Some elevators had to refuse beans during the rush because storage was filled and box cars scarce.

W. G. Weigle, mgr., Marsh Foundation Farms, Van Wert, for northwest: 95% harvested. Per acre yield comparable with last year but about 10% below normal. Total 10-15% above last year due to increased acreage. Some frost damage causing immature beans, which affected yield but not quality. Beans mostly of excellent quality. Farmers storing twice as many beans as last year and 25% more than usual. Beans that have been stored are dry and of good quality. They can remain where they are until late spring. Price will be primary factor in their movement.

ONTARIO

R. H. Peck, River Canard, for southwest: 80% harvested. Average yield will likely be some lower than last year. Total about same due to increased acreage. Considerable part of crop suffered some frost damage, particularly late plantings of late varieties. Beans grading very good, mostly No. 1 for those harvested to date. About 15% going into farm storage, somewhat less than usual due to favorable price. Yields vary widely. Some early plantings yielded better than 30 bu. per acre with late plantings down to 10. On the average, considering the season, soybeans are very satisfactory crop. Harvesting conditions have been ideal.

SOUTH DAKOTA

H. G. Miller & Son, Garden City, for Clark County: 65% harvested. Average 8-10 bu. per acre compared with 12-15 bu. normal. Drought reason for low yield. Plants very short and low to ground. Grading mostly No. 1. About 25% going into farm storage. Due to pretty fair price most farmers are selling. Farm storage lacking in many cases.

VIRGINIA

H. M. Taylor, Department of Agriculture, Richmond: 30% harvested. Wet weather in September caused some damage to quality. Beans grading below average. About same amount going into farm storage as in past years.

WFST VIRGINIA

R. J. Friend, extension agronomist, Morgantown: 93% harvested. Total yield same to slightly less than 1946. Beans grading good.

WISCONSIN

Geo. Briggs, Agricultural College, Madison: 50-75% harvested. Yield some higher than 1946. Due to late plantings and supplies of early soybean seed frost did as much as 90% field damage in northern counties. Small amount going into farm storage.

John P. Dries, Saukville, for southeast: (Oct. 31) 100% harvested. Per acre yield normal. Some frost damage. Beans grading No. 2 or better. Some being held in storage on farms.



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GRITS and FLAKES...

FROM THE WORLD OF SOY

Osceola Products Co., Osceola, Ark., has started operation of its new Allis-Chalmers solvent extraction plant of 200-ton capacity, Ralph Woodruff, manager reports. The firm is operating on cottonseed, but will begin on soybeans as soon as the crop has been combined.

* * * *

Wayne Zerkel, former plant manager of McMillen Feed Mills, Inc., Marion, Ohio, has been transferred to the International Sugar Beet Feed Co., in Memphis, Tenn. William Charles has succeeded him at Marion.

* * * *

Two men can unload up to 7 to 8 full grain cars an hour with the new car-unloading system of Central Soya Co., Inc., at Decatur, Ind., reports *Food Processing Review*. Before the system was installed it took 30 men to unload three carloads an hour.

* * * *

The New Holland Machine Co., New Holland, Pa., manufacturer of the flame cultivator, has become associated with the Sperry Corp., New York City, as a subsidiary.

* * * *

William N. McKee has been appointed industrial sales manager of the W. A. Cleary Corp., 254 W. 31st St., New York City. He has been employed in the naphtha, solvents and process materials section of Shell Oil Co.'s sales department in New York.

* * * *

A \$130,000 expansion program has been completed at the soybean processing plant of Consumers Cooperative Association, Coffeyville, Kans. The plant now has storage facilities for 232,800 bushels and will be able to process 700,000 bushels annually.

* * * *

Products of General Mills is a new 48-page booklet issued by General Mills, Inc., Minneapolis. The firm's soybean oils, oil meal, lecithin, and polyamide resin, are included in the descriptions. All are manufactured in the chemical division plant at Belmond, except the resin which is made at Minneapolis.

* * * *

Waukesha (Wis.) County Supervisor George J. Hermann urges a special session of the Wisconsin legislature to repeal that state's margarine taxes and license fees. He hopes increased sales of margarine will force down the price of butter.

* * * *

Distribution of the Bemis Bro. Bag Co. 1948 calendar is under way. Supplies have been sent to all Bemis offices in the country. Each page shows current, preceding and following months.

* * * *

Ralston Purina Co.'s *Salesmen's Purinagraph* for Oct. 6 endorses the government's program for conserving food supplies through more efficient feeding of livestock and poultry.

* * * *

First Lieutenant Irving E. Liener has been assigned to the staff of the Quartermaster Food and Container Institute for the Armed Forces. He will engage in nutritional studies on military rations.

* * * *

Bemis Bro. Bag Co. was recently honored by the Advertising Club of St. Louis for 50 years continuous use of the familiar Bemis "Cat-in-the-Bag" trademark. Sixty Midwest brand names were so recognized.

* * * *

Recently reelected to the board of directors of Allied Mills, Inc., were: A. G. Phillips, J. R. Cardwell, and A. E. Chapman. H. J. Buist was reelected president and chairman of the board; J. J. Guinlan, vice president and assistant secretary and treasurer; A. A. Phillips, vice president in charge of sales; L. T. Murphy, vice president in charge of plant operations; and E. W. Lenz, secretary-treasurer.

* * * *

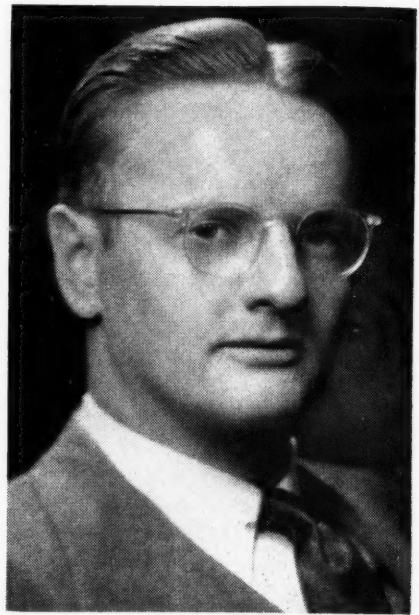
E. L. Metcalf of R. J. Brown Co., St. Louis, has been awarded a Certificate of Appreciation by the War Department for outstanding war effort work. He assisted in developing greatly improved resin and varnish formulae used in protective coatings for war material.

* * * *

The Val-A Co., 700 W. Root St., Chicago 9, has announced that, with the lifting of restrictions on certain commodities, it can again place the original Tehr-Greeze fabric cement, noted for drying and excellent adhesive qualities, on the market. For the past 4 years synthetic ingredients were used.

* * * *

The Golden Anniversary of Scientific Feeding, a history of the feed industry, by Larry Wherry, has been published by the Business Press, Milwaukee, Wis. Copies may be obtained from American Feed Manufacturers Association, 53 W. Jackson Blvd., Chicago.



PARKE W. BURROWS

FORMS NEW COMPANY

Formation of the Burrows Equipment Co., at 1316 Sherman Ave., Evanston, Ill., is announced by Parke W. Burrows, president.

The new firm will deal in grain and seed testing equipment and miscellaneous supplies for grain elevators, seed houses, flour mills and government inspection offices.

Mr. Burrows has been general manager of the Seedburo Equipment Co. for the past 6 years. Previous to that, he was connected with Ralston Purina Co.

Associated with the Burrows company are C. J. Polstra and Dwight Chapman, both formerly with Seedburo. The new firm has representatives in all principal grain and seed producing states and in many foreign countries, Mr. Burrows says.

The company has just issued a new catalog listing all key items. A copy may be obtained by writing to the above address.

— s b d —

CANNED BREAD

Bread has been added to the ranks of canned foods, the Can Manufacturers Institute announces, according to *Chain Store Age*. Vacuum-packed in tin or steel, the product is made of five grains—rye meal, cracked wheat, rice bran, barley flour and cracked oats—with *soya flour* as well. It is enriched further by adding Vitamin B complex, iron and niacin.

The Institute says the thinly sliced bread is suited particularly to long shipments and storage. Fishermen, hunters, campers and yachtmens will find the product of value, the Institute reports, since it can serve as an entire meal due to its high protein, mineral and vitamin content. High caloric content—approximately 1,140 calories—makes the bread of value for overseas food parcels.

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Chicago 9, Ill.

Recent addition to the ranks of foods packaged in tinplate is Wuest's sliced bread made of soya flour and cracked oats. It is widely used as almost a complete meal in overseas parcels and by campers and fishermen.

* * * *

Falk & Co., Pittsburgh, Pa., has announced the appointment of Sherwood & Co., Kansas City 8, as the firm's representative for that area. Sherwood will handle soybean and other oils and specialties for the protective coatings industry.

* * * *

Bemis Bro. Bag Co. has purchased a 15-acre site in Hopkins, Minneapolis suburb, for the construction of additional plant facilities. Building plans are incomplete. The new plant will be managed by W. J. Geimer.

* * * *

Sale of 31,500,000 pounds of soy flour to the U. S. Army for use abroad has been announced by A. E. Staley Mfg. Co. Shipment equal to 10 trainloads of 40 cars each, will be completed January 31.

* * * *

Soy Flour Association has moved from Board of Trade Bldg., to new quarters at Room 1045, 327 S. LaSalle, Chicago 4, President A. E. Leger announces. The change was made November 3.

* * * *

A. J. Lamminen, formerly associated with the Ford Co.'s research laboratory, has been elected managing director of Edible Oils, Ltd., Winnipeg, Manitoba. Mr. Lamminen has been in charge of engineering and construction work in setting up a vegetable oil plant for the firm at Fort William, Ontario, since 1946.

* * * *

Nestor B. Betzold, director of the Glidden Co. and general sales and advertising manager of the Durkee Famous Foods division, was recently awarded a gold watch in honor of 25 years of service with the Cleveland concern. Mr. Betzold was named general sales and advertising manager of the Durkee division in 1938 and was elected a director in January of this year.

* * * *

C. R. Mahaney, vice president of the St. Regis Paper Co. and general manager of its Panelyte division, has announced the opening of a new Panelyte district sales office in Minneapolis.

* * * *

H. R. Cox, extension specialist in soils, Rutgers University, New Brunswick, N. J., retired November 1.

* * * *

Annual convention of the Western Grain & Feed Association will be held at Hotel Fort Des Moines November 24-25, Mark W. Thornburg, secretary, announces.

* * * *

Allis-Chalmers Continuous Solvent Extraction Process, 20-page booklet describing this process for soybeans and other oilseeds, has been issued by Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

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This modern hydraulic closing device, perfected by Valley Foundry & Machine Works, simplifies filtering in processing operations.

NEW BULLETIN

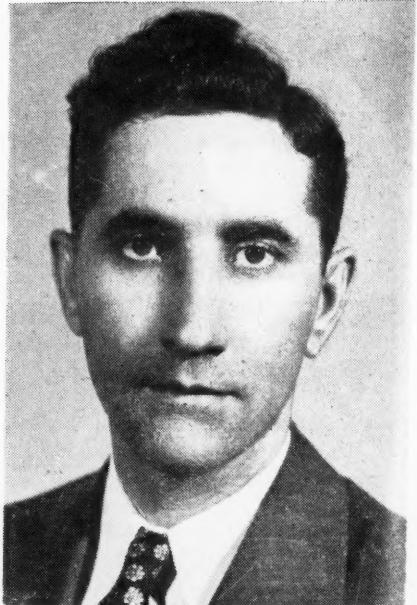
A new 16-page Bulletin describing filtering operations, materials of construction and the five major filter press models, is offered by Valley Foundry & Machine Works, Inc., Fresno, Calif.

The new hydraulic closing device developed by Valley engineers for use in connection with its own or other filter presses is described in detail. Said to be the latest type of hydraulic closing device in the field, the unit features finger-tip control and sure-sealing action.

Copies of the bulletin may be obtained by writing to above address. Ask for Bulletin No. 202.

— s b d —

JOINS BLAW-KNOX



Keator McCubbin has joined the chemical plants division of Blaw-Knox Co., Pittsburgh, to direct the engineering and sales of plants and equipment for the oils and fats field. Activities in oil seed handling and milling and oil processing are being expanded to include the solvent extraction processes recently developed through Blaw-Knox Research. Mr. McCubbin was previously with the A. E. Staley Manufacturing Co., where he was assistant superintendent of the oils and fats division.



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Publications

Australia

THE SOYBEAN INDUSTRY. Report of the Commonwealth Mission of Investigation into the industry in U.S.A. and on its possible establishment in Australia. By F. W. Bulcock, director-general of agriculture, Department of Commerce and Agriculture; H. A. Mullett, director of agriculture, Department of Agriculture, Victoria; C. J. McKeon, director of agriculture, Department of Agriculture, Queensland; and H. A. Granthan, agronomist, Department of Agriculture, New South Wales, Melbourne, Australia. 83 pages. 1947.

An extensive report on the soybean industry in the U. S. based on the visit of 4-months' duration by the Mission in this country in 1946. The Mission spent considerable time with the U. S. Department of Agriculture, state experiment stations, processors, soybean growers and other leaders in the industry.

The Mission attempts to point out the areas in Australia which are reasonably similar to the U. S. soybean belt, and therefore may be expected to grow soybeans profitably.

Australia was short of both drying oils and protein concentrates during the war. The Mission urges developing an oilseed industry to fill this gap. An experimental and research program should include flax, sunflowers, safflower, and peanuts as well as soybeans.

The authors recommend that the Commonwealth and states set up a vegetable oils committee and make available a substantial sum annually for 5 years for a breeding program; and that investigations into vegetable oils be undertaken.

THE SOYBEAN—ITS POSSIBILITIES IN WEST AUSTRALIA. By H. G. Elliott, in *Journal of Agriculture, West Australia*.

Acreage grown to date in Australia is small and mainly experimental. But a large

range of varieties are now under trial at various points.

Early trials by the Australian Department of Agriculture were not successful due to lack of adapted varieties, inability to get good strains of inoculating bacteria, and low germination of imported seed. But in recent years better results have been obtained.

Varieties which have given good results in the southwest and yielded up to 30 bushels an acre include: Manchu Yellow, Haberlandt, Arksoy, Easy Cook, Harrow, Mammoth Brown, Kenway and Q1463. Apparently only U. S. and Canadian varieties have been tried.

SOYBEANS. By W. D. Kerle, special agronomist. *Agricultural Gazette*, May 1, 1947. New South Wales.

Experience with soybeans in New South Wales extends over the last 30 years. Hundreds of varieties have been imported from the Orient, the U. S. and other countries. Experiments have been conducted at Hawkesbury Agricultural College and experiment farms with varieties, cultural practices, fertilizers, inoculation, etc.

Yields have not yet been sufficient to recommend soybeans as a commercial crop, though some variety trials have produced over 20 bushels per acre.

Varieties available in New South Wales include: Potchefstroom 169 (from South Africa), Easy Cook, Haberlandt, Otootan, Lincoln, Dunfield and Richland.

Foods

FATS FROM COAL SEEN DEFICIENT. Digest of report from Dr. F. H. Rein. *Food Industry*, October 1947.

Synthetic edible fats, used to a limited extent in margarine by the Germans during the war, were not approved by the medical profession, according to a report recently received from Dr. F. H. Rein, of the Physio-

logical Institute of the University, Goettingen.

According to Dr. Rein, a "fat" was produced as a byproduct of the hydrogenation of coal in the production of synthetic gasoline. "During the war to a small extent it was given to the German population and to the German army as an edible fat," says Dr. Rein.

"Any severe sicknesses and deaths did not occur from this, but only because the amounts consumed had been too small and the period of feeding too short.

"Especially the well-known physiological chemist, Dr. Karl Thomas, has carefully tested the usability of this 'edible fat' in the animal experiment during the war. He came to the conclusion that the thus obtained fatty acids partly contain branched carbon chains, which do not exist in natural fats. These chemical groups are well absorbed from the intestine; in amounts in excess of 120 grams per day, however, diarrhea occurs in humans. In the animal experiment damage to the kidneys was observed. At that time the Nazi government forbade Dr. Karl Thomas to publish the results. But in spite of this the synthetic butter was handed out to the German population.

"We believe that it would be appropriate to utilize for human consumption all the natural fats which in the world at present are still being used for the production of soap, but to use the synthetic fat for the manufacture of soap," says Dr. Rein.

THE NUTRITIVE VALUE OF MARGARINE AND EDIBLE VEGETABLE OILS. By H. Wilkinson. Lever Bros. & Unilever, Ltd. *Chemistry and Industry*, May 1947.

Refined deodorized vegetable oils used primarily for edible purposes, particularly the manufacture of margarine, are absorbed 96%-99% in the human digestive tract, according to this British report. The edible vegetable oils obtainable in England do not differ much one from another.

Most vegetable oils are not prominent as sources of vitamins and provitamins. Some do contain provitamin A carotenoids, and others, traces of vitamin D.

Vitamin E content of common vegetable

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oils has not been fully worked out. Most oils contain some vitamin E, and it is likely that this may be the most important vitamin present.

Margarine, of course, is fortified with some vitamins during manufacture.

RESULTS OF CHEMICAL AND BAKING EXAMINATIONS OF SOYA FLOURS. Interim Report No. 1. 20 pages. 29 tables. By Theodore Soloski, Joseph Cryns and H. H. Stevens. Quartermaster Food and Container Institute for the Armed Forces. Office of the Quartermaster General, Chicago, Ill.

Studies in cooperation with a number of soybean processors were undertaken to determine the nature of deterioration of soy flour in storage. Baking tests were made at the same time to study the effects of storage on the baking qualities of the different soy flour samples.

The investigators concluded that not over 10 percent soy flour should be used in a bread formula if the character of the finished product is to be retained. The percentage of yeast should be increased and the doughs should be slightly stiffer than normal in formulae employing soy flour, they said.

It is recommended that soy flour be packaged in containers as nearly moisture-proof as possible.

The authors state that oxidation of fat and ultimate rancidity of soy flour will be

of no problem after 5-to-6-months' storage. Relatively large amounts of trace metals are present, but they seem to be quite uniformly distributed and may be in such a form that they are not conducive to accelerated rancidity or oxidation.

PROCESSED OILSEEDS AND SEED-CAKES AS ARTICLES OF HUMAN FOOD. K. V. Giril, S. Kuppuswamy and V. Subrahmanyam, Indian Institute of Science, Bangalore. *Science and Culture*, January, 1947.

An account of experiments with groundnut and various kinds of oilseed cakes in the human diet in India.

Regional Laboratory

IMPROVEMENT AND INDUSTRIAL UTILIZATION OF SOYBEANS. Research under the Soybean Laboratory Program. Miscellaneous Publication No. 623, U. S. Department of Agriculture. 32 pages. 10 cents. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

If you want the story of the work of the U. S. Regional Soybean Laboratory, Urbana, Ill., and its cooperating agencies in 12 North Central and 12 Southern states, this booklet will give it to you.

The publication is one of a series of nine covering the regional laboratories set up under the Bankhead-Jones Act of 1935.

A list of publications to date of the Soybean Laboratory and its cooperators is included. This includes the technological research of the Laboratory until its transfer to the Northern Regional Research Laboratory, Peoria, Ill., in 1942.

Varieties

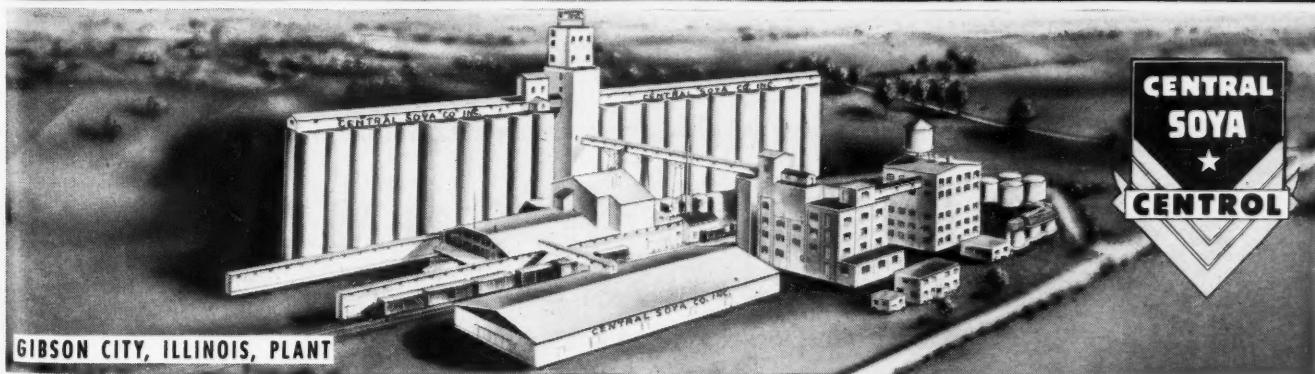
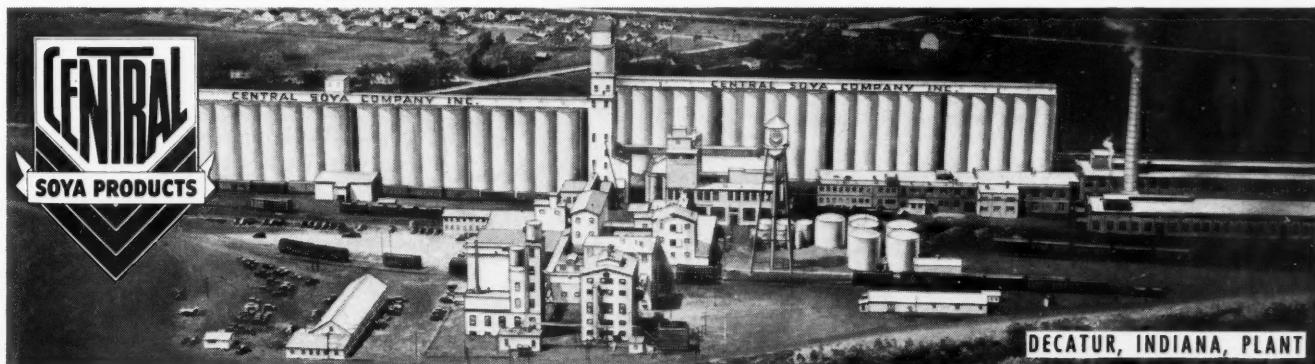
INDIANA SOYBEAN VARIETY TESTS AND VARIETY RECOMMENDATIONS. By A. H. Probst and G. H. Cutler. Circular 322. Agricultural Experiment Station, Lafayette, Ind.

Variety tests at various points in Indiana have been conducted by the U. S. Regional Soybean Laboratory and the Indiana Experiment Station. Probst and Cutler report the results of the tests and indicate most promising varieties for commercial production. These are compared with other varieties, most of which have been grown for many years in Indiana.

COMPARATIVE CAROTENE OXIDATION POWER OF SOYBEAN VARIETIES. By M. R. Shetlar, C. L. Shetlar and J. F. Lyman. *History of Randleigh Farm*, Lockport, N. Y., 1947.

A short study of the comparative effectiveness of the enzyme lipoxidase prepared from several varieties of soybeans.

On the basis of incomplete results, there appears to be some difference between varieties of soybeans in content of the enzyme.



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WASHINGTON Digest



European Program There is little question that the special session of Congress will make a quick emergency appropriation to tide Europe over the worst of the winter months.

But the best-informed here doubt that Congress will get around to digesting anything as big as the proposed long-term Marshall Plan until toward the end of the session next summer.

Outcome of European aid legislation also will have an important bearing on new farm price support legislation which must be enacted next year unless the present price support program is extended.

Much of the success of the Marshall Plan depends upon export of the relatively "cheap" foods — cereals, beans, peas, fats and oils.

New farm price legislation will have to be geared into whatever European aid program Congress finally agrees to set up. This may mean the decisions on new farm legislation will have to be put off until late next spring, or early summer.

Congress is expected to appropriate funds for European relief in about three phases:

First, a quick appropriation during the special session to carry Europe through the winter.

Next, an interim appropriation to tide Europe through the summer to next harvest.

And finally, adoption of a long-range aid program.

The prospect of a return of price controls and rationing being voted at the special session of Congress is taken lightly here.

Instead of attempting a come-back of price controls in any form, the Administration is expected to try to head off further inflation by using allocation and credit controls.

Extension and broadening of export and import controls which expire at the end of February are considered certain.

Many USDA officials doubt that allocation powers will be necessary to obtain the needed food exports. However, they think public demand probably will force use of allocations on grains and feeds.

Goals and Supports There is a disposition in USDA to hold off announcement of the 1948 soybean goal and price support programs until the special session of Congress develops more information on the funds available for export programs, and what controls will be authorized.

Informal talks with USDA officials indicate the goal recommendation will be from 10½ to 11 million acres, and a price support of \$2.04 a bushel, or 90 percent of parity as of next August 15, whichever is higher.

George Prichard, new director of the fats and oils branch, wants it made clear his branch has made no official recommendation on 1948 soybean price support, as reported here last month.

Prichard points out it will be necessary to support the price of soybeans at a level at least 90 percent of parity. This level for October 15 was \$2.06 a bushel.

With the parity index on the rise, it is possible that the index next August will be high enough that the mandatory support level for soybeans will be above \$2.04 a bushel.

Export to Japan? There is some prospect that a limited volume of whole soybeans may be exported to Japan this year for use in preparation of soya base foods for human consumption.

This has been discussed by Army and State Department officials with the Department of Agriculture. Army and State Department are reported to be strongly in favor of some whole soybean exports. Fats

By **PORTER M. HEDGE**

Washington Correspondent for
The Soybean Digest

and oils officials haven't been too keen on the idea since there is plenty of crushing capacity in this country.

The Army has also discussed with USDA an allocation of 50,000 long tons of soybean oil meal for export to Japan to mix with the soya base foods as an extender.

Five thousand long tons of meal have been allocated. USDA is willing to allocate the remainder of the requested meal, but this depends on getting soybeans.

If Army and State Department press for export of some whole beans, the request probably will be granted.

Present policy on export of protein meals is to limit shipments except for "emergencies" or for use as human food. Until the feed and export supply picture clears up more, USDA wants to keep most of the protein feeds at home.

Just-published official BAE estimates of the supply of oilseed cakes and meal available for domestic feeding during the 1947-48 season indicate about a 5 percent increase over the same period a year ago.

Most of the increase is in cottonseed and linseed cake and meal. Soybean cake and meal for livestock feeding is estimated at about 425,000 tons below last year. Here are the official estimates of cake and meal supplies for this season:

Type	1947	1946	1937-41 Av.
	— 1,000 tons —		
Soybean	3,350	3,775	1,258
Cottonseed	1,825	1,435	1,958
Linseed	650	390	481
Peanut	125	90	74
Copra	200	190	135
Total	6,150	5,880	3,906

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Soybean Oil Stockpile Commodity Credit Corporation has begun to stockpile soybean

oil ahead of actual requisitions for export.

But up to late October, no oil had been purchased. There were only a few offers, and these are reported to have been over the market price on the dates bids were to be accepted.

Main purpose of the stockpiling operation is to buy cheaper, and to be in the market when farmers are selling so as to give them rather than "speculators" any price advantages that might accrue from export programs.

The new policy, which is authorized for some other commodities in addition to wheat, is a departure from traditional CCC buying operations. In the past, CCC usually hasn't made purchases until it had firm requisitions.

Army and State Department funds for purchase of non-cereal foods have been practically all committed, and the remaining funds are mostly reserved for grains.

Whether the suggested 50 percent increase in fats and oils exports this fiscal year actually materializes, depends on new funds for European aid to be appropriated by Congress.

Changes in Fats and Oils George L. Prichard is new director of the fats and oils branch of Production and Marketing Administration, succeeding Omer W. Herrmann, who last month was named assistant administrator



PRICHARD

SORKIN

of the Agricultural Research Administration.

Prichard, a native of North Carolina, has been assistant director of the branch since August, 1946, and has worked with the Department of Agriculture since 1931.

New chief of the oilseeds division of the fats and oils branch of PMA is Martin Sorkin, with 14 years' experience in the Department of Agriculture, six of them working with soybean growers in Illinois.

Sorkin was a member of the USDA fats and oils committee throughout the war years. He came to the fats and oils branch this fall from AAA where he was chief of the economic and research section of the Cornbelt.

CHINA HARVESTS LARGER SUMMER OILSEED CROPS

Summer oilseed crops in China (excluding Manchuria) have increased somewhat this year over the 1946 harvest, according to the first official estimate. The 1947 output, however, is still considerably below the 1931-37 average production.

Soybeans are estimated at 187 million bushels, representing a 12 percent increase over the 167 million harvest of 1946 but a 16 percent decrease from the prewar average production of 224 million.

China a/: Summer Soybean Production, 1947 with Comparisons

	Soybeans
Year	1,000 bushels
Average 1931-37	223,870
1946	166,618
1947 b/	187,108

American Consulate General, Shanghai.
a/ Excluding Manchuria. b/ First estimate.

In the nine months ended September 30, 1947, Philippine copra exports were approximately 702,000 long tons surpassing the record shipments of copra and coconut oil in terms of copra reported for the 12 months of 1940, reports *Foreign Crops and Markets*.

The United States, as in prewar years, was the most important market, taking 53 percent.

Market Street

We invite the readers of THE SOYBEAN DIGEST to use "MARKET STREET" for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here.

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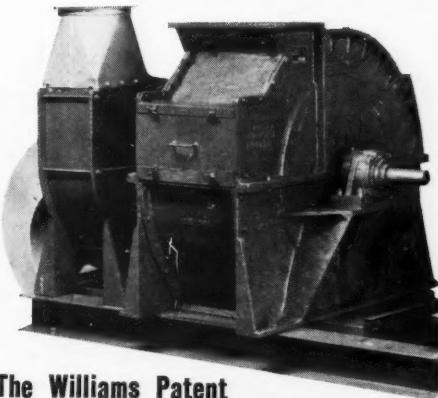
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15—42,000 Gal. Cap. 21'6" x 16' Vertical
30—42,000 Gal. Cap. 29'8" x 8' Vertical
10—126,000 Gal. Cap. 29'8" x 24' Vertical
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"Meteor" Grinder for
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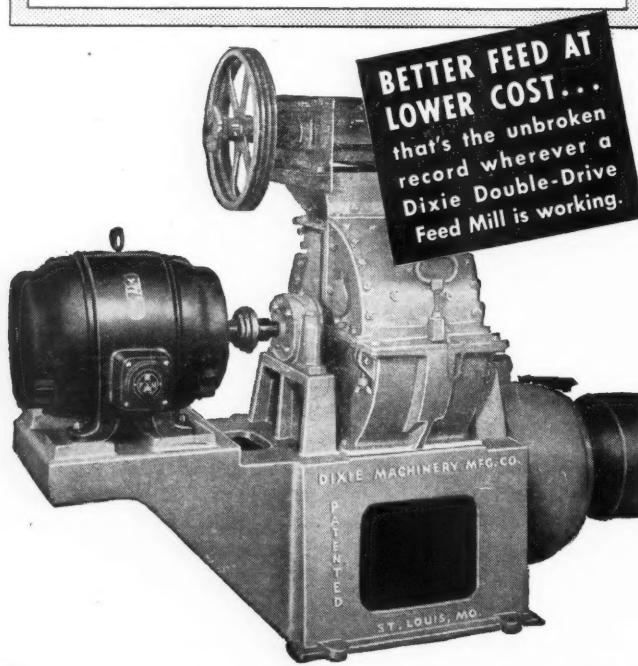
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Oakland 7, Calif.

In The **MARKETS**

ALL MARKETS UNSETTLED DURING OCTOBER

October markets were unsettled and erratic.

There were sharp breaks in soybeans and soybean oil meal during the first week with strong rallies after the 15th. Soybean oil tended to be easy, but was bolstered by a stronger bean market the latter part of the month.

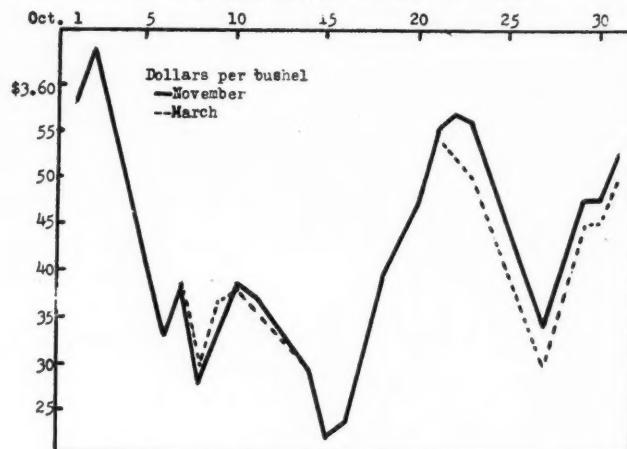
November No. 2 soybeans were quoted at \$3.64 Oct. 2, the highest since the establishment of the Chicago futures market in July. But prices slid downhill as beans began coming to market, to a point of \$3.22 Oct. 15.

Growers demonstrated their ability to resist lower prices during the peak movement of soybeans, and a strong upward trend developed. Much of the lost ground was regained during the third week of the month.

A relatively light country movement put backbone into the market. Some say this was due to a light crop. One estimate placed the national total at 165 million bu., 15 million below the U. S. Department of Agriculture's Oct. 1 forecast. Considerable quantities of soybeans were reported being held on the farm and in country elevators.

The high Chicago cash price for No. 2 soybeans was \$3.73 Oct. 1, the low \$3.23 1/2 Oct. 16. The month closed at \$3.44.

No. 2 SOYBEANS, CHICAGO FUTURES

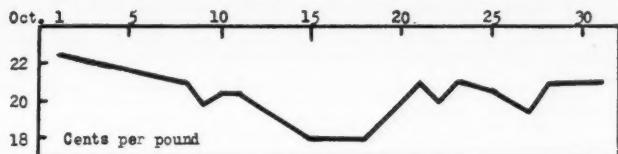


BULK SOYBEAN OIL MEAL, DECATUR BASIS



SOYBEAN DIGEST

CRUDE SOYBEAN OIL, TANKERS, F.O.B. DECATUR



There was considerable temporary uneasiness in the market following the President's call for a special session of Congress.

Bulk soybean oil meal basis Decatur was quoted at \$109 Oct. 1, high point since the removal of government price ceilings a year ago. But the market caved in the next day, and most gains made during September were wiped out the following week. Month's low point was \$78 for bulk meal Oct. 15. This was about equal to last summer's price level. A depressing factor was a slow mixed feed market. Higher bean prices were reflected to some extent in meal the latter part of the month.

The government's continuing request for soybean oil for export helped to strengthen the oil prices, which sought somewhat lower prices during the middle of the month.

On October 28 the differential between crude cottonseed and soybean oils was wiped out. Both sold at the same price, 21c.

Crude soybean oil in tankers, FOB Decatur, began the month at 22½c, closing at 21c. Low point was 18c Oct. 15-18.

Trading was heavy in both oil and meal. Meal production was ample to take care of all inquiries.

The New York Produce Clearing Association adopted a sliding scale for margarine requirements on cottonseed oil and soybean oil contracts traded on the Produce Exchange. The unit of change on all trades except straddles is now \$600 a contract. On straddle positions the margin will be \$200 regardless of price.

SOYBEAN MEAL FUTURES

MEMPHIS—OCT. 31*

Contract—100 Tons

Decatur—Sacked Basis

December \$81.25@83.00

January, 1948 79.50@81.25

March, 1948 79.00

May, 1948 78.90@80.00

July, 1948 78.50@80.00

Sales: 500. ‡Flat.

*Reported by the Chicago Journal of Commerce.

• COMMERCIAL SOYBEAN STOCKS. Production and Marketing Administration's grain stock reports.

U. S. SOYBEANS IN STORE AND AFLOAT AT DOMESTIC MARKETS—(1,000 bu.)

	Sept. 29	Oct. 7	Oct. 14	Oct. 21	Oct. 28
Atlantic Coast	10	3			24
Northwestern and					
Upper Lake	32	21	1	83	516
Lower Lake	3	3		277	1,295
Fast Central	53	30	164	733	1,528
West Central, South- western and Western	26	11	24	216	878
Pacific Coast	0			2	
Total current week	124	68	189	1,312	4,241
Total year ago	157	109	2,133	5,775	10,793

• SOYBEAN OIL OUTPUT. September production of crude and refined soybean oil decreased from August, according to preliminary figures released by the Bureau of the Census, Department of Commerce. Production of crude soybean oil was reported at 91 million pounds, 14% less than the output in August and 10% more than September of last year. Factory and warehouse stocks amounting to 80 million pounds showed a 24% decrease from August and were 31% less than the stocks reported in September 1946.

Production of refined soybean oil totaled 89 million pounds, 2% less than the reported output for August and 1% more than Sep-

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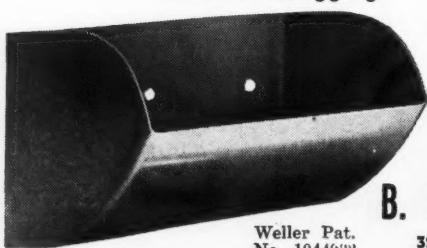


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tember 1946. Stocks at the end of the month decreased to 123 million pounds, 13% below stocks at the end of August.

SOYBEANS AND SOYBEAN OIL, SEPTEMBER 1947				
Item	Unit	Sept. 1947	Aug. 1947	Sept. 1946
Soybeans	Short tons	290,701	338,507	270,970
Crushed	Short tons	83,657	307,436	53,483
Stocks at oil mills (end of month)	Short tons			
Crude soybean oil Production	M pounds	90,966	105,315	82,506
Stocks (end of month)	M pounds	80,215	105,941	116,401
Refined soybean oil Production	M pounds	89,400	91,251	88,106
Stocks (end of month)	M pounds	122,511	140,430	77,216

*Revised.

● STOCKS OF SOYBEANS. Relatively small carryover stocks of 5,324,000 bushels of soybeans were in all storage positions on October 1, the Bureau of Agricultural Economics reports. This carryover is about 1 million bushels larger than a year ago, but otherwise is the smallest in the 6 years of record. Of the current total, the Crop Reporting Board estimates 2,206,000 bushels on farms and 271,000 bushels in interior mills, elevators and warehouses. Also included are 2,779,000 bushels in processing plants, as enumerated by the Bureau of the Census, and 68,000 bushels in commercial stocks at terminals reported by the Production and Marketing Administration. Processors' stocks are about a million bushels larger than a year ago.

Disappearance of soybeans in the July-September quarter is indicated at 34.7 million bushels. The quantity processed for oil in the same period was 34.6 million bushels, according to the Bureau of the Census. Comparable quantities processed in the July-September quarter were 34.0 million bushels in 1946, about 37.4 million bushels in 1945 and 31.8 million in 1944. During the 12-month period ended September 30, 1947, processors used a record 170.1 million bushels for oil, compared with 159.5 million in the preceding 12 months.

● INSPECTIONS. The 1946-47 soybean crop fell considerably below the high quality of the three previous crop years, according to reports to the Department of Agriculture. Only 70 percent graded No. 2 or better compared with 92 percent, 88 percent, and 86 percent respectively for the 3 years immediately preceding.

The total of 83,726 cars inspected during the crop year 1946-47 was the smallest in the last 3 years but larger than the crop years 1940-43.

September 1947 inspections totaled 433 cars, with 60 percent grading No. 2 or better.

● SOYBEAN GLUE IN PLYWOOD. Soybean glue consumed by the softwood plywood industry in August totaled 1,936,000 pounds in August, reports Bureau of the Census. This compares with 1,673,000 pounds in July and 2,059,000 pounds in August, 1946.

Other glue used by the industry in August (lbs.): casein, 471,000; phenolic resin, 2,840,000; other, 221,000. Total glue consumed was 5,468,000 pounds.

Soybean glue stocks totaled 1,107,000 pounds August 31. Total glue stocks at the end of August were 3,828,000 pounds.

● STANDARD SHORTENING SHIPMENTS. Reported by members of Institute of Shortening Mfrs., in pounds.

October 4	8,344,722
October 11	7,960,709
October 18	8,436,163
October 25	7,173,576



Government Orders

● EXPORT ALLOCATIONS. The U. S. Department of Agriculture announced the following export allocations and exchanges during October:

500,000 lbs. soybeans to India for experimental purposes; 5,000 long tons soybean oil meal to the Army for relief feeding in Japan;

16,800 lbs. soybean oil to Republic of Panama; 660,000 lbs. soybean oil to Italy; 62,000 lbs. soybean oil to Costa Rica; 220,000 lbs. soybean oil to Italy; 132,000 lbs. soybean oil to the Republic of Colombia, the U. S. to receive equivalent quantities of copra from each country's IEFC allocation from the Philippines.

A previous allocation of 238,000 lbs. of soybean oil was cancelled at the request of the New Zealand government; and 200,000 lbs. soybean oil was substituted for an equal amount of edible tallow and peanut oil to Venezuela.

• **GREEN DAMAGE.** The U. S. Department of Agriculture has issued the following statement in an effort to prevent misunderstanding of the common use of the term "green damage" as applied to soybeans:

"Under the U. S. Grain Standards, there is no 'green damage' as such. However, in the grading of soybeans for the damage factor, soybeans are considered damaged when a cross-section shows an intense green color or when it is green in color and of a mealy or chalky consistency.

"The damaged kernels analysis shown on soybean inspection certificates for the 1947 crop will make no reference to any specific type of damaged kernels.

"Soybeans which are not *intensely* green or which are green and do not have a mealy or chalky consistency will not be considered as damaged unless other damage factors are present."

• **CCC TO BUY SOYBEAN OIL FOR EXPORT.** The U. S. Department of Agriculture has invited offers for the sale of crude soybean oil to the Commodity Credit Corporation, for export.

Offers must be submitted by telegram each Monday and Thursday, covering any quantity in multiples of not less than minimum tank carloads of approximately 60,000 pounds.

Offers will be considered for November, and December shipment.

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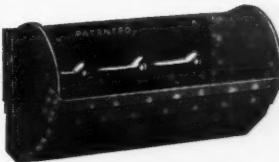
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